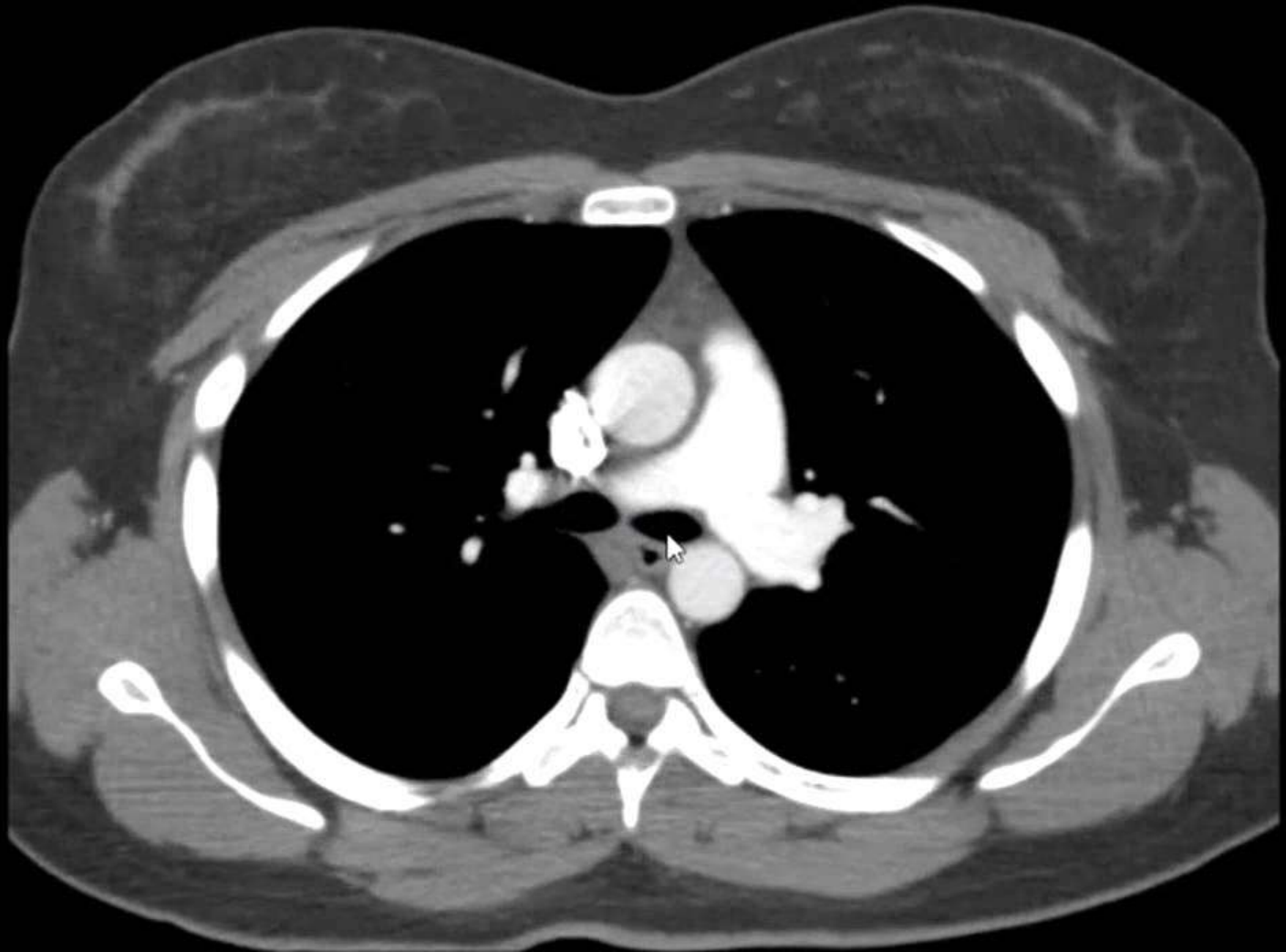
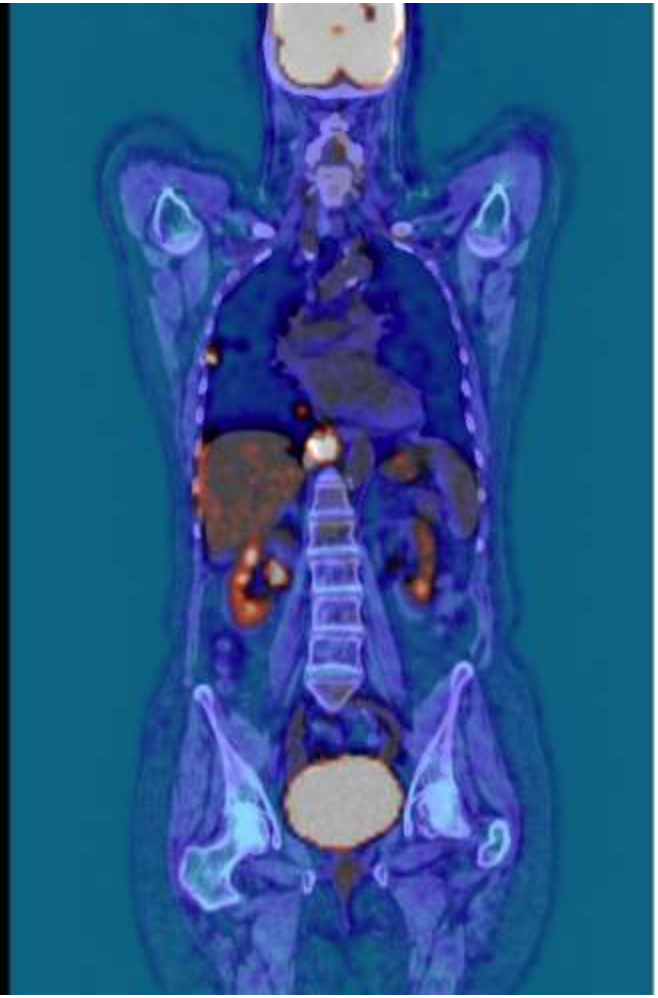
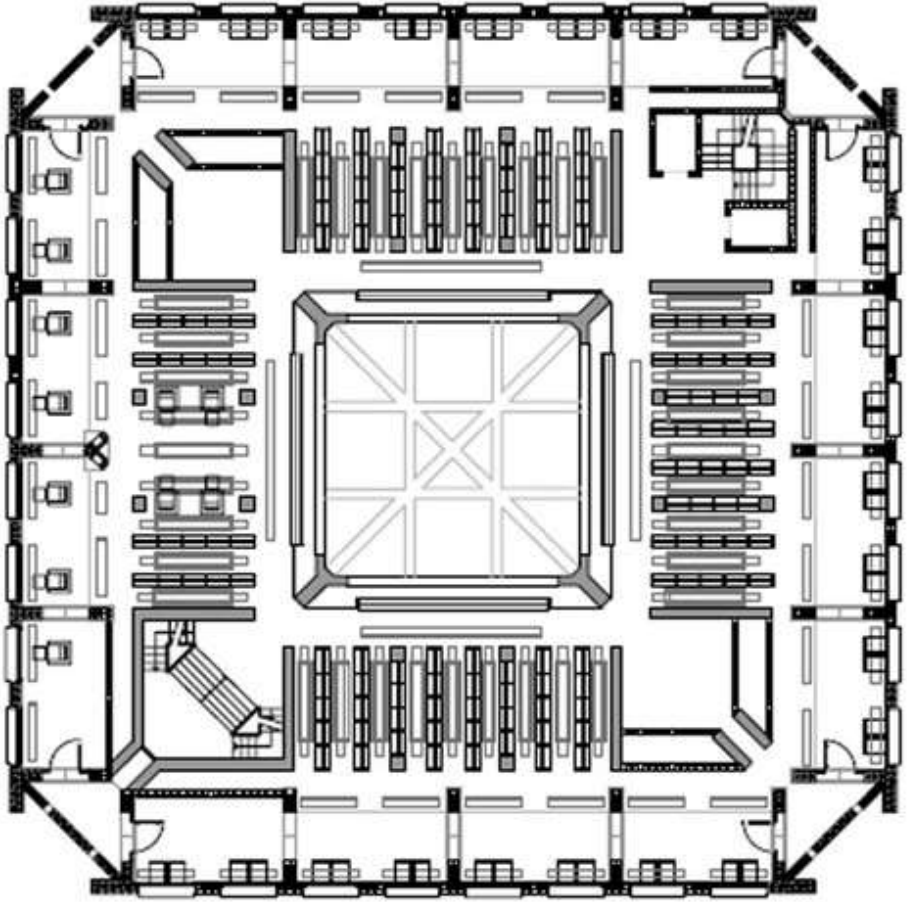


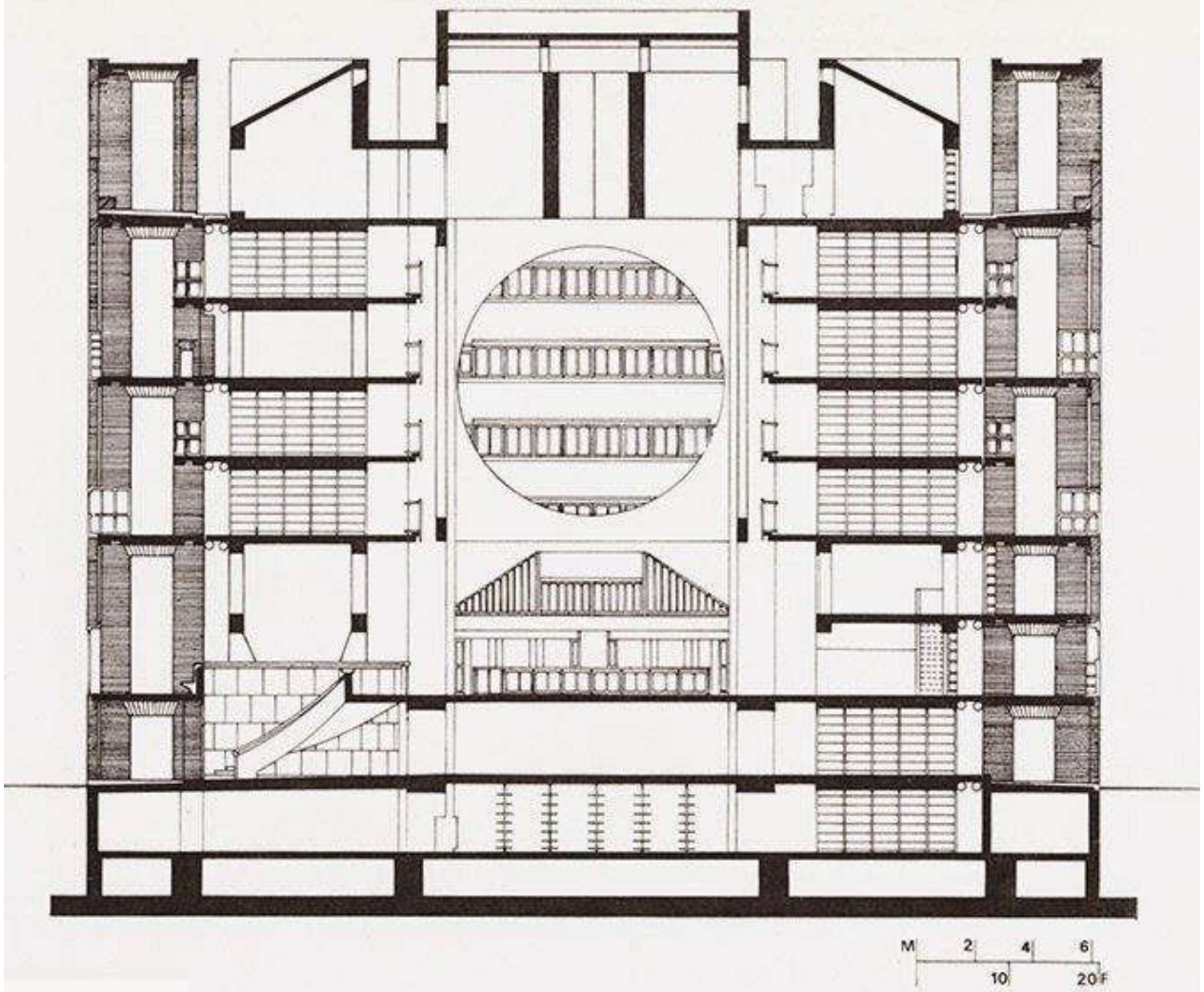



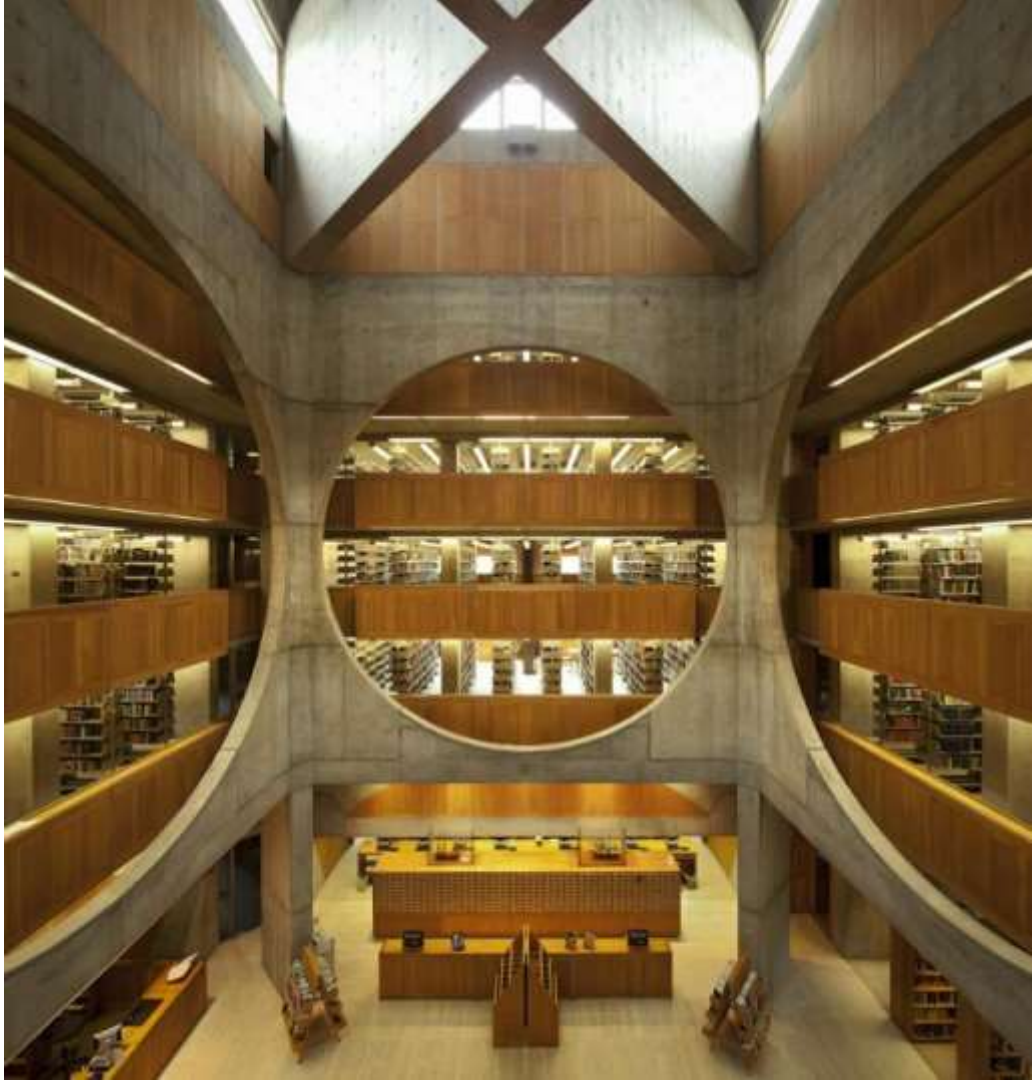

[corte]

o corte "é muitas vezes entendido como um tipo simplificado de desenho, produzido no final do processo de concepção para descrever condições estruturais e materiais para a etapa da construção."

[Paul Lewis, Marc Tsurumaki e David J. Lewis, ‘Manual of Section’]




M 2 4 6
10 20 F

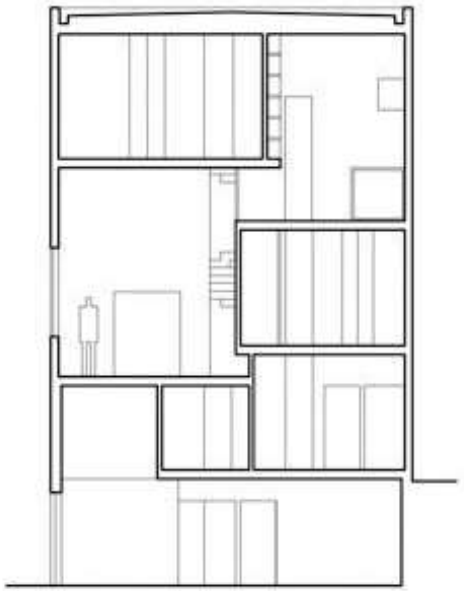


1F
A
2F
B

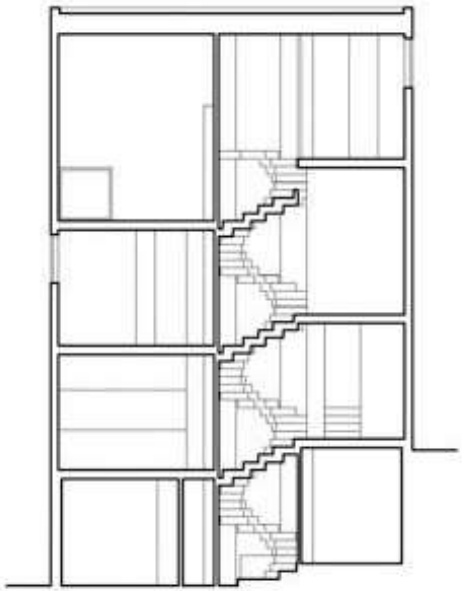
3F

4F

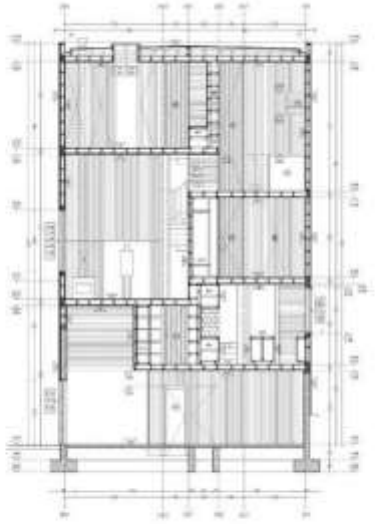
5F

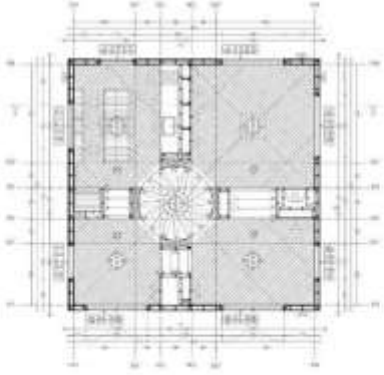


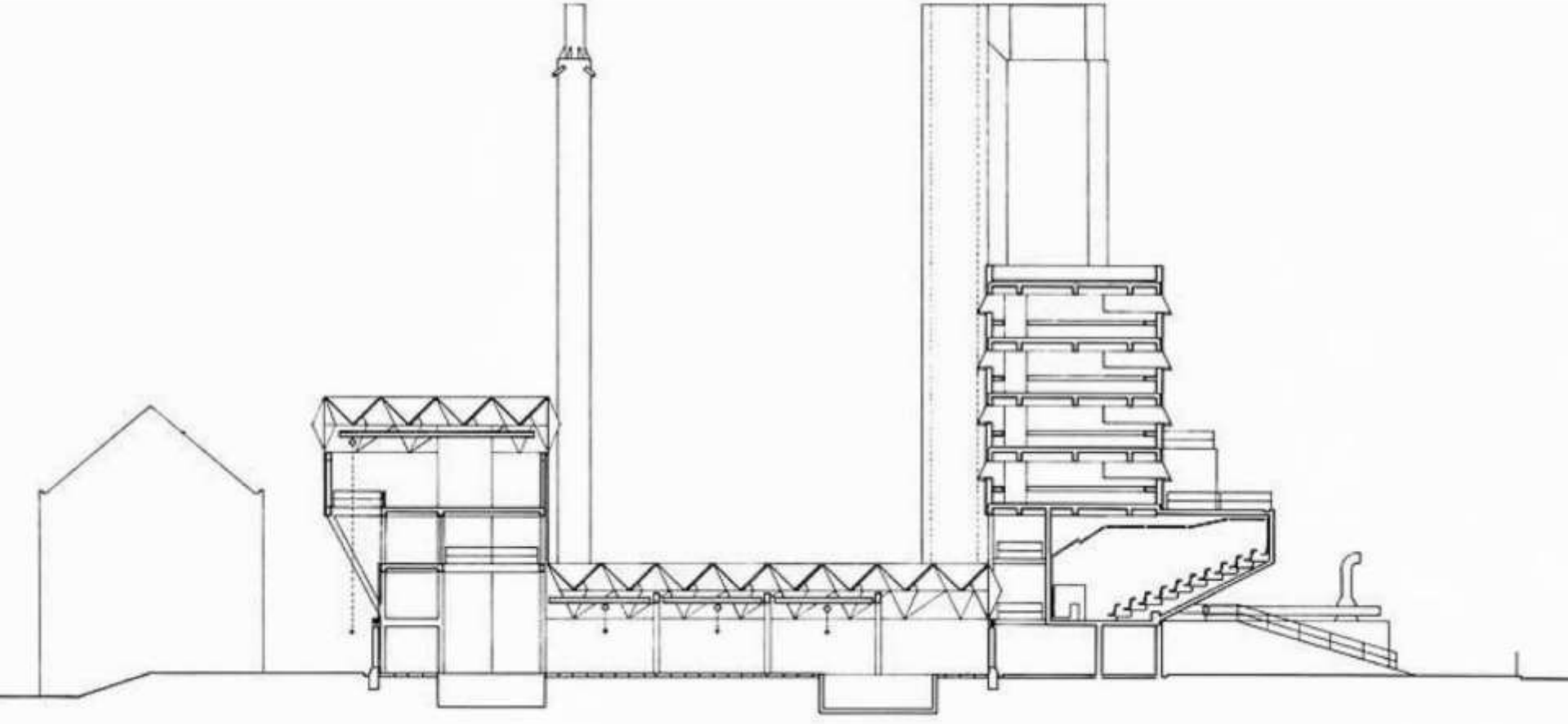
AA



BB

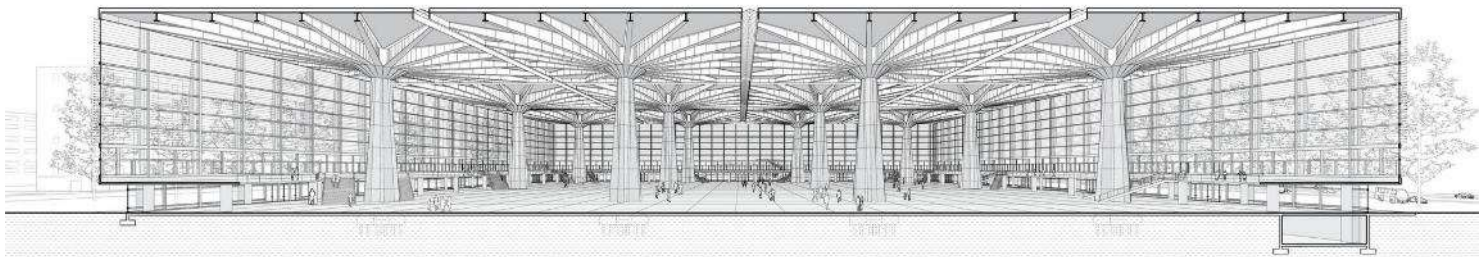






O corte vertical, combinado com a representação da figura humana, ajuda a identificar escala e proporção. Ele revela simultaneamente o contexto urbano, sua estrutura interna, as qualidades visuais ornamentais e o material do interior. [...] cortes detalhados ajudam a resolver os problemas térmicos, técnicos e estruturais.

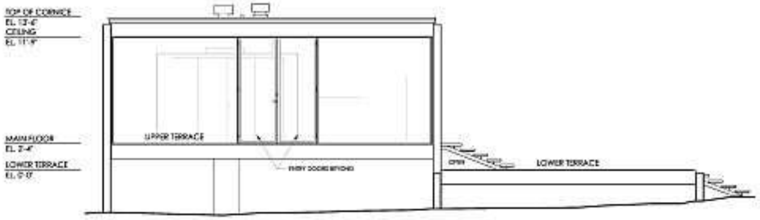
[extrusão] . a extrusão direta do plano para uma altura suficiente para o uso pretendido.

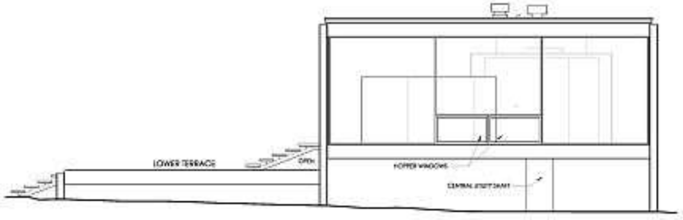


Palace of Labor | Turin, Italy

Pier Luigi Nervi | 1961

Covering 269,098 sq ft (25,000 sq m), this enormous exhibition hall and training center was designed in part as a response to the expedited construction sequence of a competition. Built in eleven months, the roof was conceived as sixteen individual 82-ft-tall (25 m) mushroomlike forms, each consisting of a 65-ft-7-in (20 m) cast-in-place reinforced-concrete column topped with a 131-ft-3-in (40 m) square steel roof assembly. The accumulation of these units, built one by one, allowed interiors and the glass enclosure to be constructed prior to the completion of the entire roof. The large concrete columns taper from a 16-ft-5-in-wide (5 m) cruciform, to a 8-ft-2-in-diameter (2.5 m) circle, to which are anchored twenty radiating steel-beam spokes that support the roof. Continuous glass strips run between the structures, allowing natural light into the space and registering the autonomy of each massive structural unit. A row of external steel ribs spans between a perimeter mezzanine and the roof to stiffen the enclosing glass curtain. The height and scale of this section exceeds conventions and transforms this extruded section into a grand civic space and spectacle.



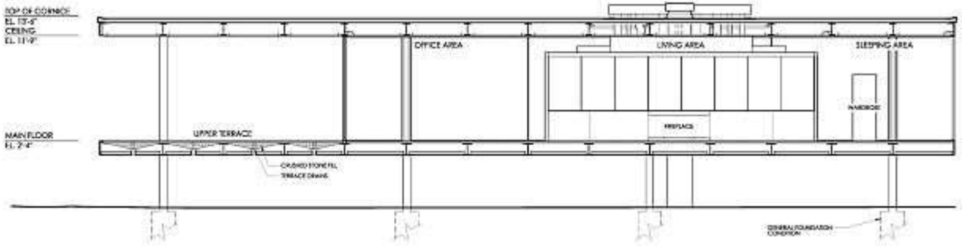


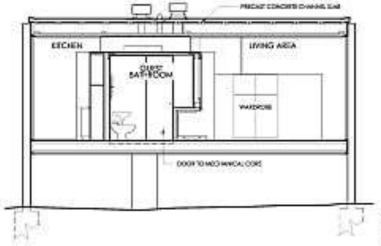
0 1 2 3 4 5 10 FEET SCALE: 1/4"=1'-0"

WEST ELEVATION

EAST ELEVATION

0 .5 1 2 3 METERS SCALE: 1:48





0 1 2 3 4 5 10 FEET SCALE: 1/4"=1'-0"

SECTION A-A

SECTION B-B

0 .5 1 2 3 METERS SCALE: 1:48

INTERIOR FINISHES

DINING AREA, OFFICE AREA, LIVING AREA, SLEEPING AREA	
FLOOR	2'-0" X 2'-9" X 1-1/4" TRAVERTINE
GLAZING	ORIGINAL POLISHED PLATE GLASS AND REPLACEMENT TEMPERED PANES
CEILING	SUSPENDED LATH AND PLASTER
CORE	PRIMAVERA VENEER WITH DEMOUNTABLE PRIMAVERA PANELS
WARDROBE	TEAK VENEER

HOUSE

DRAWN BY: JENNA CELLINI, ELIZABETH MILNARIK, BRAD ROEDER, SUMMER 2008

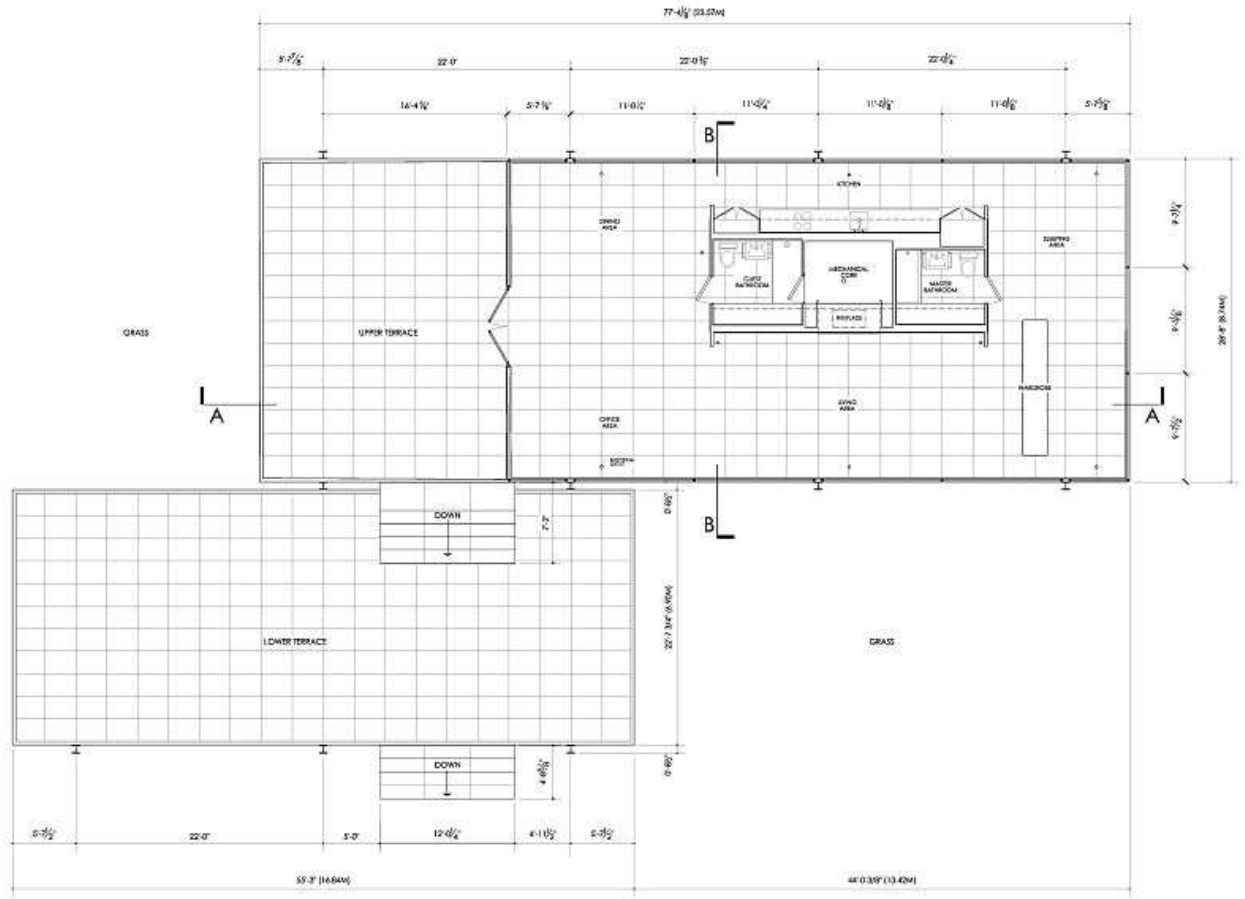
FARNSWORTH HOUSE RECORDING PROJECT
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR

EDITH FARNSWORTH HOUSE

14520 RIVER ROAD PLANO KENDALL COUNTY ILLINOIS

SURVEY NO. IL-1105

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 5 OF 8 SHEETS



0 1 2 3 4 5 10
FEET SCALE: 1/4"=1'-0"

PLAN

0 1 2 3
METERS SCALE: 1:50

N

HOUSE

DRAWN BY: JENNA CELLINI, ELIZABETH MILLMORE, BRAD ROEDER, SUMMER 2009

FARNSWORTH HOUSE RECORDING PROJECT

14520 RIVER ROAD

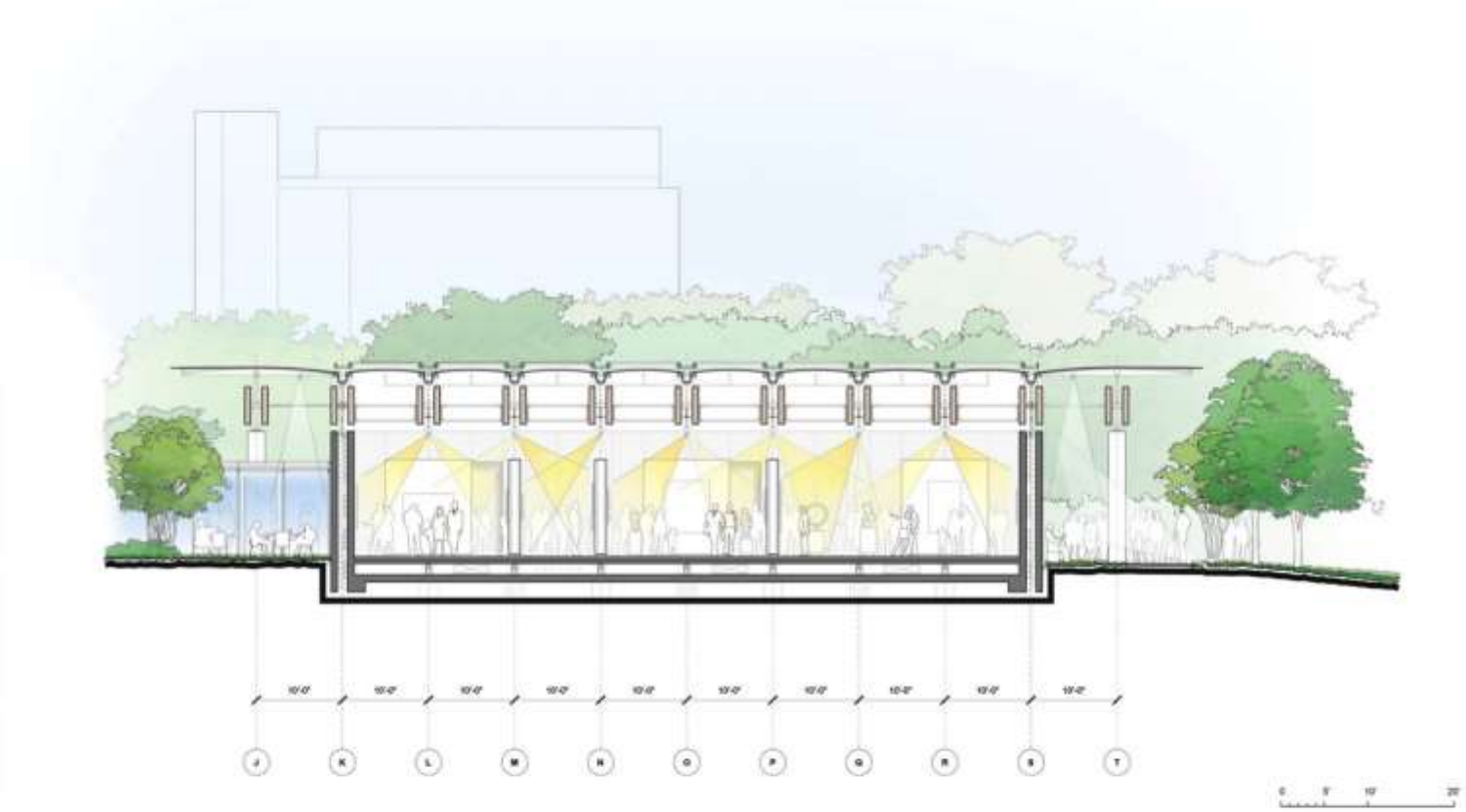
EDITH FARNSWORTH HOUSE
PLANO

KENDALL COUNTY

ILLINOIS

SURVEY NO.
IL-1103

HISTORIC AMERICAN BUILDINGS SURVEY
SHEET 3 OF 8 SHEETS

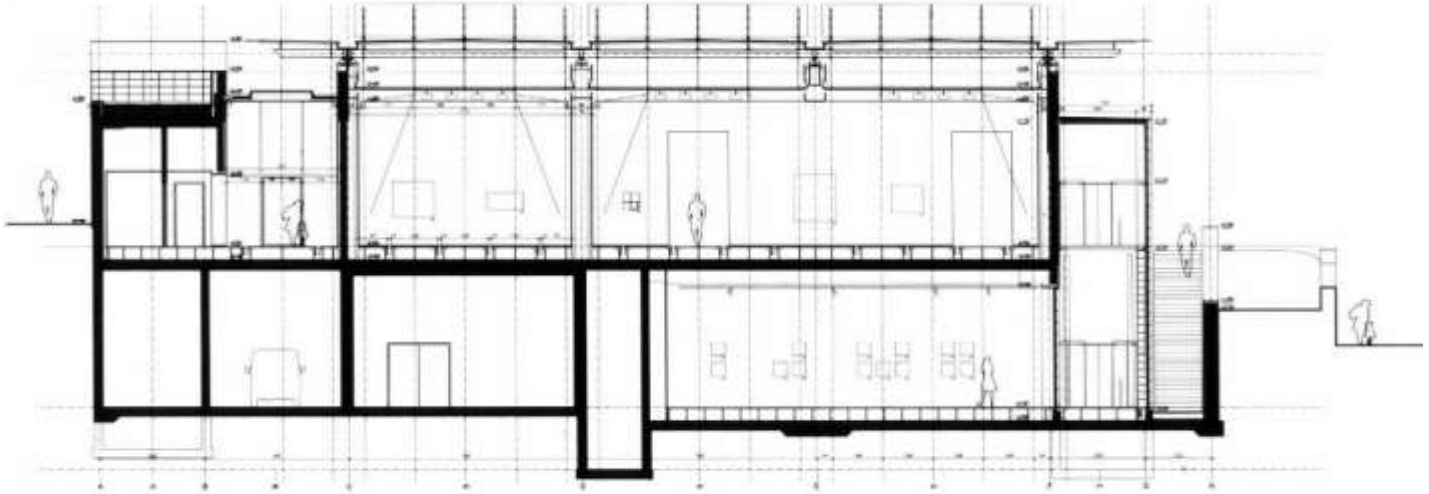


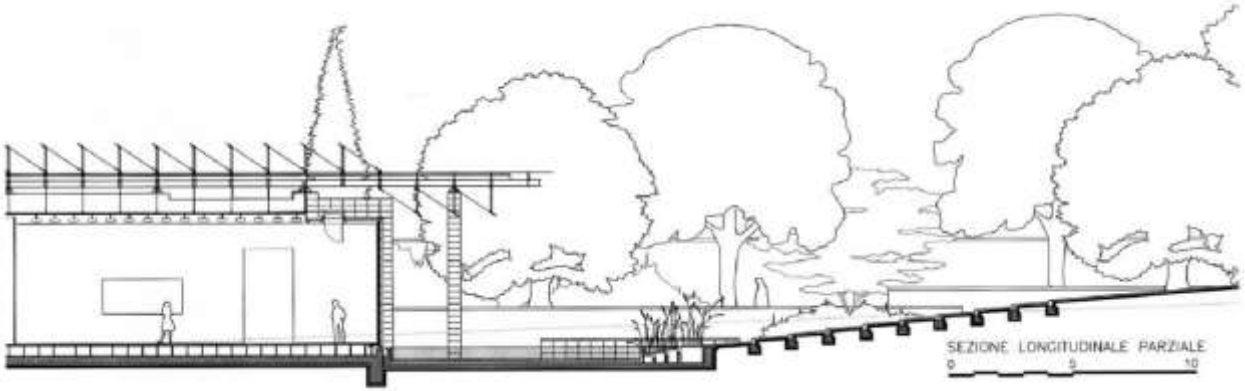
KIMBELL ART MUSEUM

Renzo Piano Building Workshop

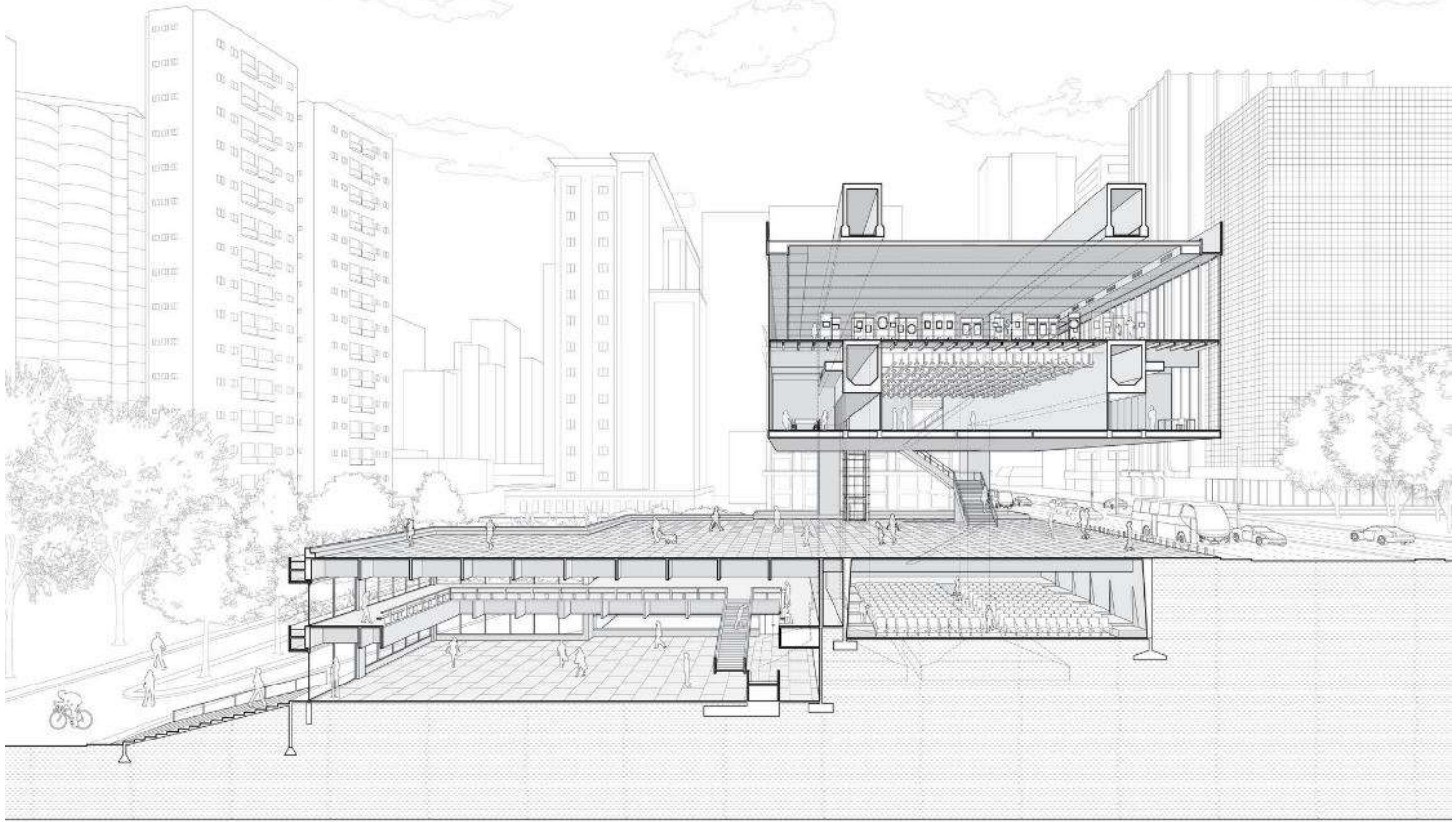
South Gallery Section

October 16th, 2013




SEZIONE LONGITUDINALE PARZIALE
0
5
10

[empilhamento] . os planos dos níveis são colocadas diretamente um sobre o outro - um corte extrudado ou perfilado, repetido com ou sem variações.

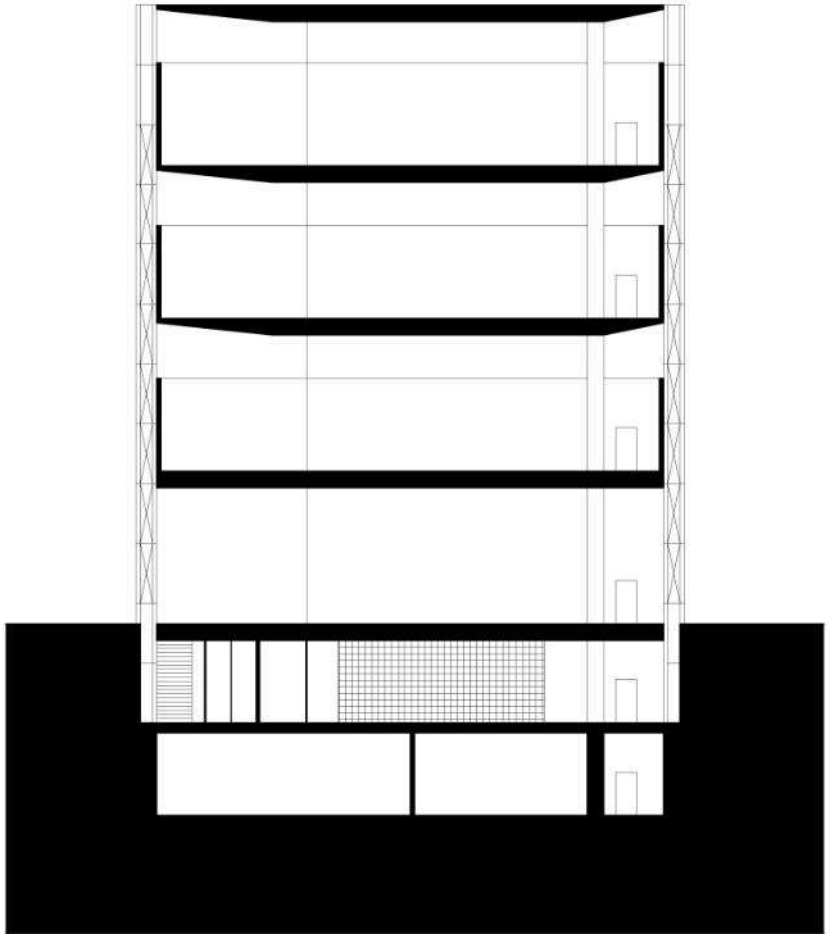


São Paolo Museum of Art | São Paolo, Brazil

Lina Bo Bardi | 1968

This cultural center comprises three stacked volumetric parts: the first suspended 26 ft 3 in (8 m) in the air, the second submerged below grade, and the third located in between—an exterior belvedere at street level. Two pairs of hollow prestressed 8-ft-2-in-by-11-ft-6-in (2.5 by 3.5 m) concrete frames span the 243-ft (74.1 m) length of the upper volume, suspending two floors. The lower floor contains offices, a library, and a central exhibition space, with circulation corridors located immediately below the concrete beam. On the upper level, the concrete beams are external, producing an unimpeded exhibition hall enclosed by a curtain wall on all four sides. An external stair and elevator link the suspended volume and the plaza with the below-grade civic hall, auditoriums, theater, library, restaurant, and service spaces. Exploiting the topography of its urban site, this stacked complex is paradoxically both subterranean and floating, camouflaged and monumental, compressed and expansive.


Clima:
Construção
Desconstrução
NATUREZA
23 56



SECTION

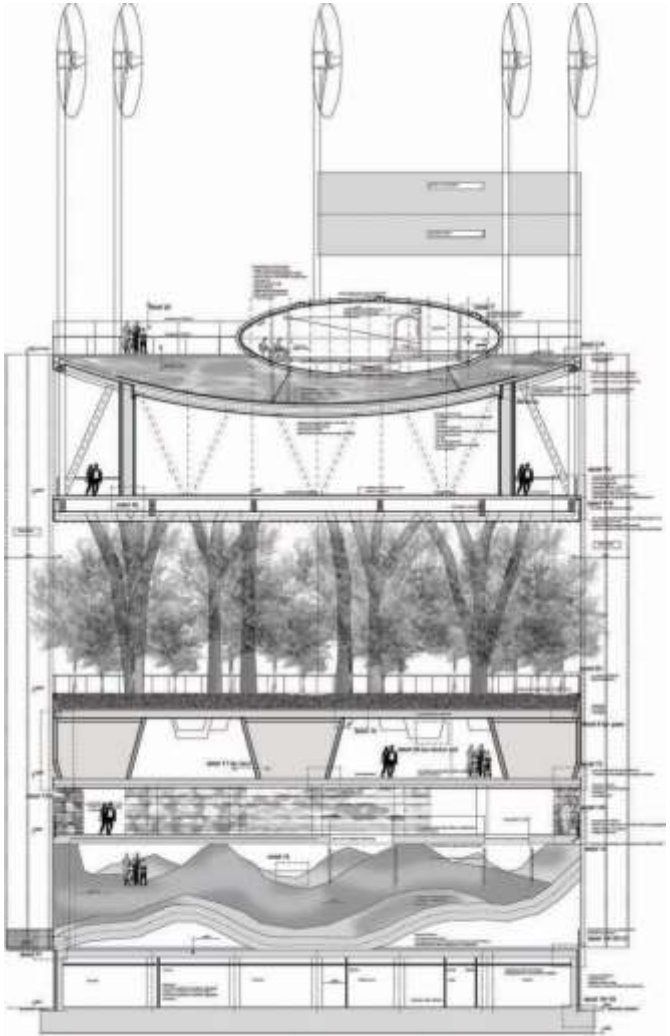
SECTION

PLAN (UNDERGROUND)

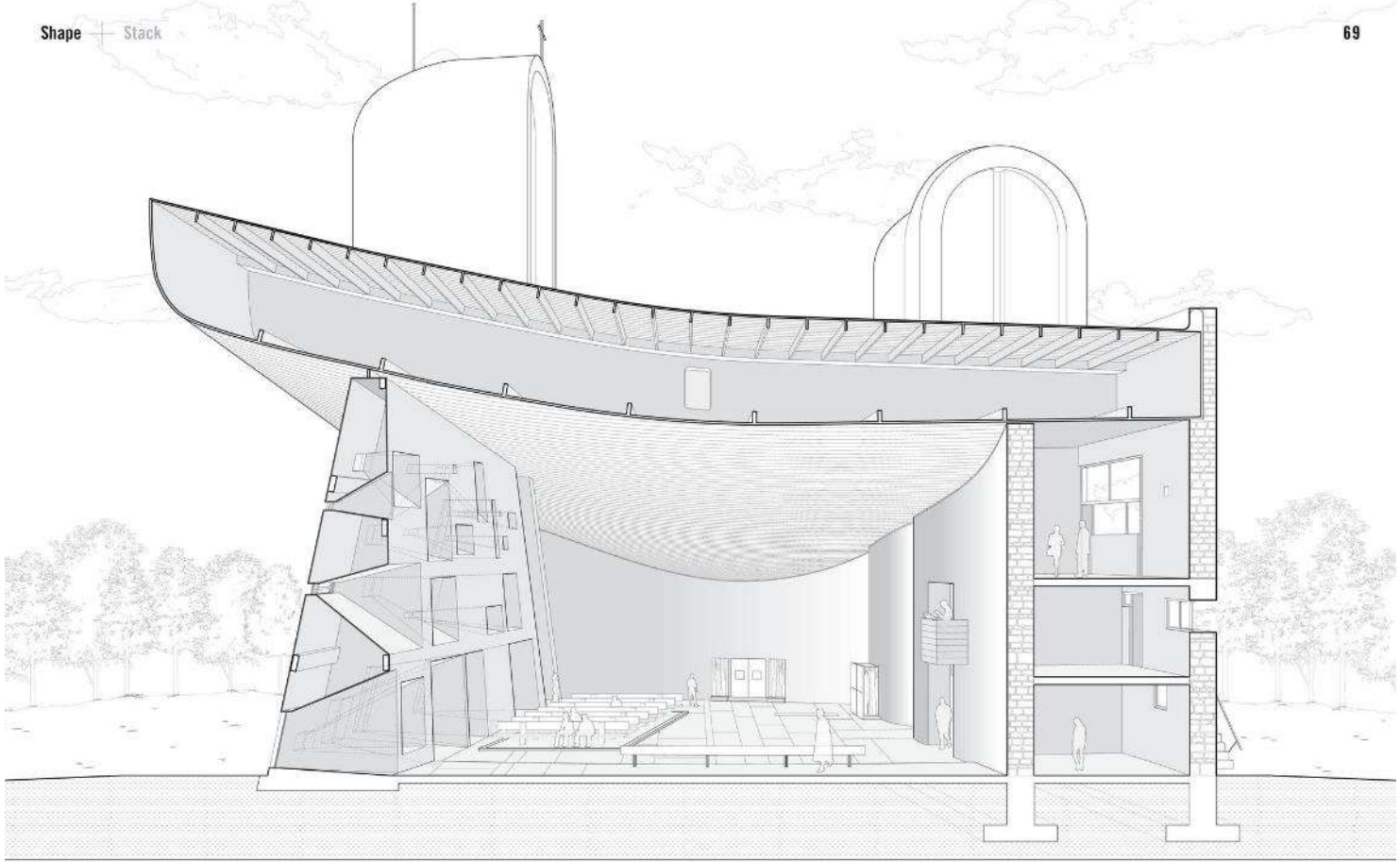
PLAN (GROUND FLOOR)

PLAN (GALLERY LEVELS)

PLAN (TOP LEVEL)



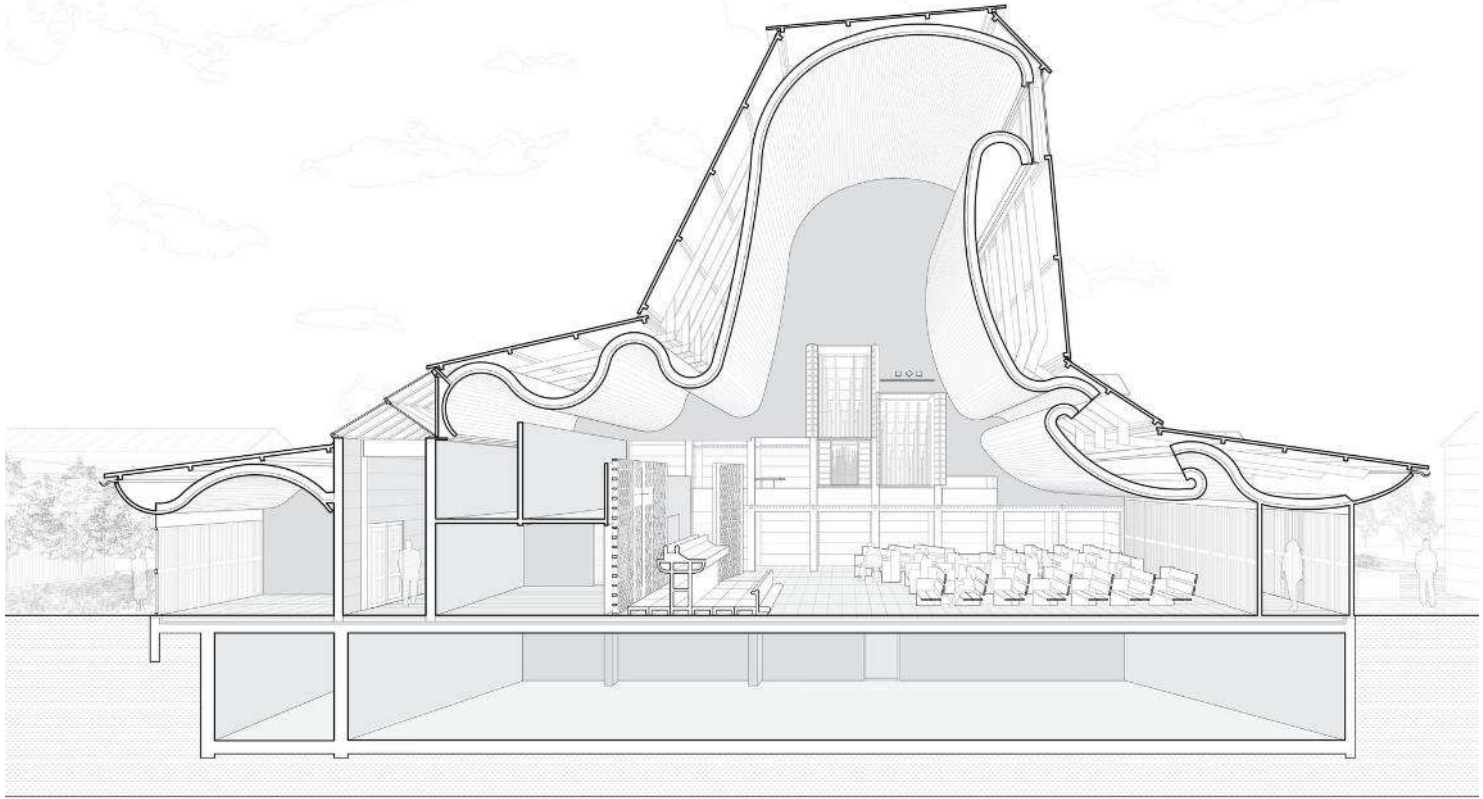
[forma] . a deformação de uma [ou mais de uma] das superfícies horizontais primárias da construção para esculpir o espaço.



Notre Dame du Haut | Ronchamp, France

Le Corbusier | 1954

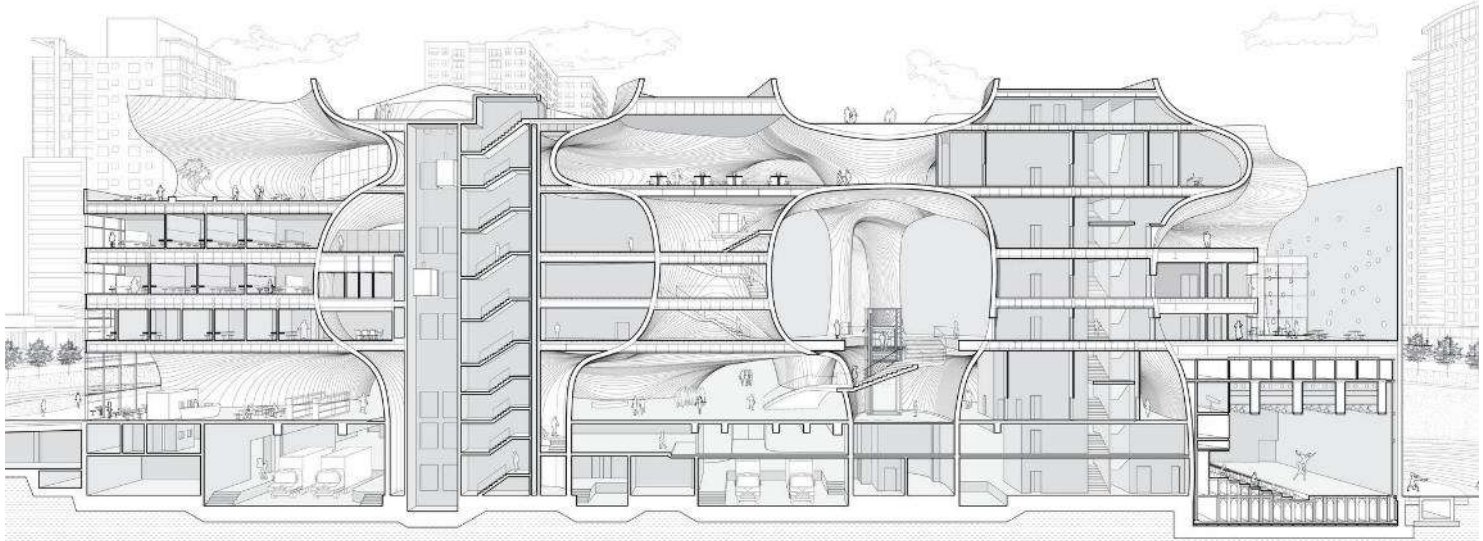
The section of Le Corbusier's well-known pilgrimage chapels reveals material and structural paradoxes. Both the south wall and the roof appear to be massive but are hollow. The ceiling, over 7 ft (2.1 m) deep in some areas, is formed by curved concrete girders and parallel purlins that span between the girders. This structural system produces the convex underbelly defining the interior of the church and gathers into a single rain scupper at the rear. The surfaces of the south wall are supported by an internal concrete frame; its pyramidal apertures are formed by thin shells of gunite. In contrast, the other perimeter walls, which appear less massive than the south wall, are solid—composed of concrete columns and stone salvaged from the chapel that previously occupied the site. The joint between the south wall and the ceiling is mediated by an 8-in (20.3 cm) clerestory of glass, illuminating the curvature of a roof that appears to float unmoored to the south wall. Following the topography of the site, the floor slopes gently toward the altar. Unlike those religious spaces that use a concave ceiling to gather and focus an interior space, the convex, shaped section of Ronchamp pushes against the periphery, while merging with three smaller chapels at the sides of the nave.



Bagsværd Church | Copenhagen, Denmark

Jørn Utzon | 1976

In plan, the chapel of the Church at Bagsværd is the central space in a rectangular collection of rooms and courtyards, which are framed by perimeter aisles used for circulation throughout the church. Natural light enters primarily through a large skylight located between the two uppermost folds of the curved ceiling, as well as through the glass ceilings of the perimeter aisles. The surface of this ceiling, which is at its lowest above the entry, compressing space over the congregation, vaults skyward toward the altar and accentuates lines of sight beyond the sacristy. A sequence of connected arcs evoking layers of clouds forms the sectional geometry of the ceiling. The ceiling is composed of thin board-formed concrete shells, which span 63 ft 8 in (19.4 m) between the two perimeter aisles and support the external metal roof. The structural relationship between the ceiling and roof inverts the typical hierarchy, in which interior surfaces are supported by exterior structure. In this shaped section, the voluminous quality of the interior stands in extreme contrast to the flat surfaces of the exterior massing.



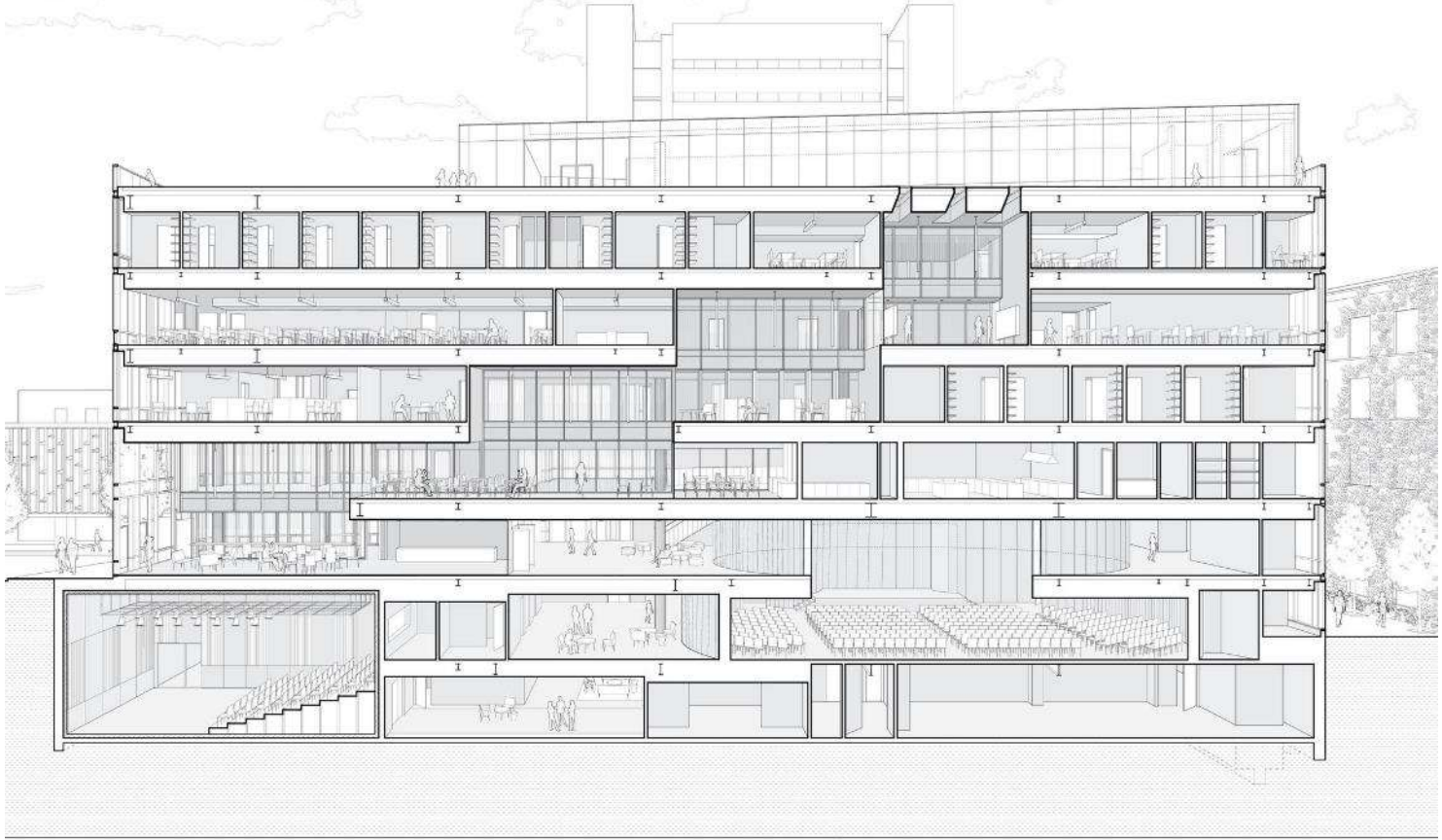
Taichung Metropolitan Opera House | Taichung, Taiwan

Toyo Ito & Associates | 2016

This opera house, containing a two-thousand-seat grand theater, an eight-hundred-seat playhouse, and a two-hundred-seat black box theater, is articulated by a continuous topological grid, using three-dimensional curved forms to eradicate distinctions between horizontal and vertical surfaces.

Formed from fifty-eight catenoids and built by spraying concrete onto a sequence of steel truss walls that rationalize the complex form, the primary space-defining structure is horizontal only at brief points of tangency. Programs are held on stacked horizontal floors that are nested within the curved surfaces. The shaped sections of these curved surfaces are therefore visible as walls and ceilings or as the perimeter of circulation spaces and atrium voids, but rarely as floors. The facades are rendered as cuts through the building diagram. The roughly 1-ft-thick (30.5 cm) structural curves of this hybrid section are infilled with curtain wall or porous shotcrete, or left open to render the inflected spaces as exterior voids.

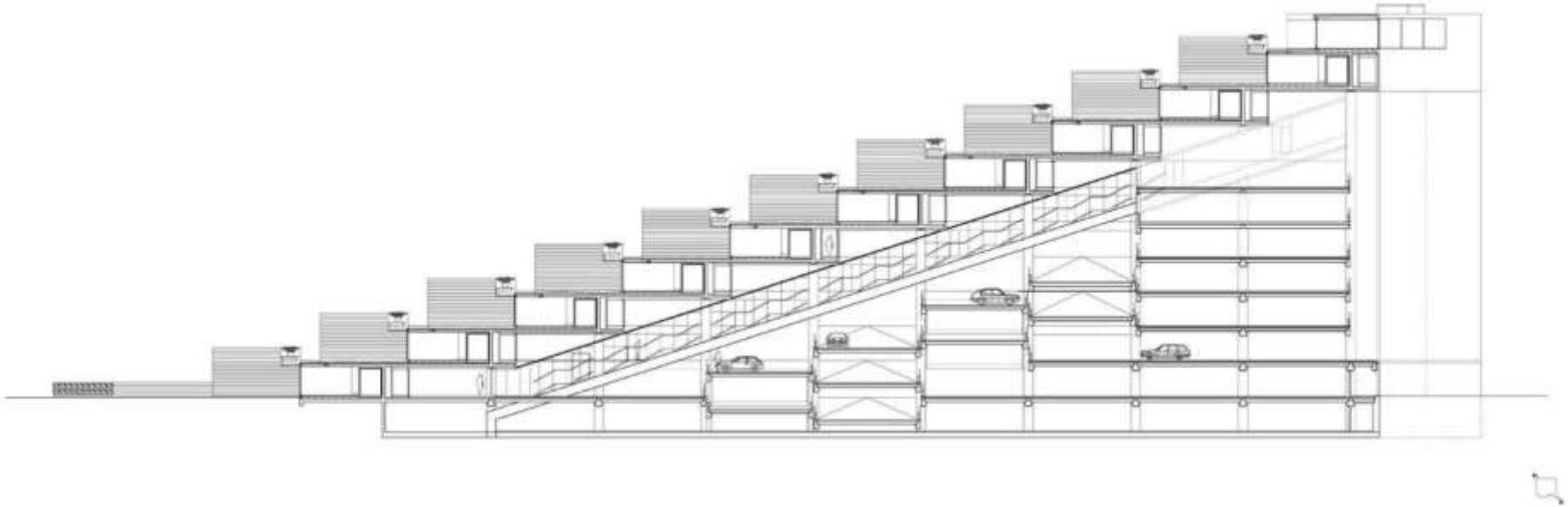
[cisalhamento] . o uso de uma fenda [abertura] ou corte ao longo do eixo horizontal ou vertical de um edifício para gerar diferentes espacialidades.

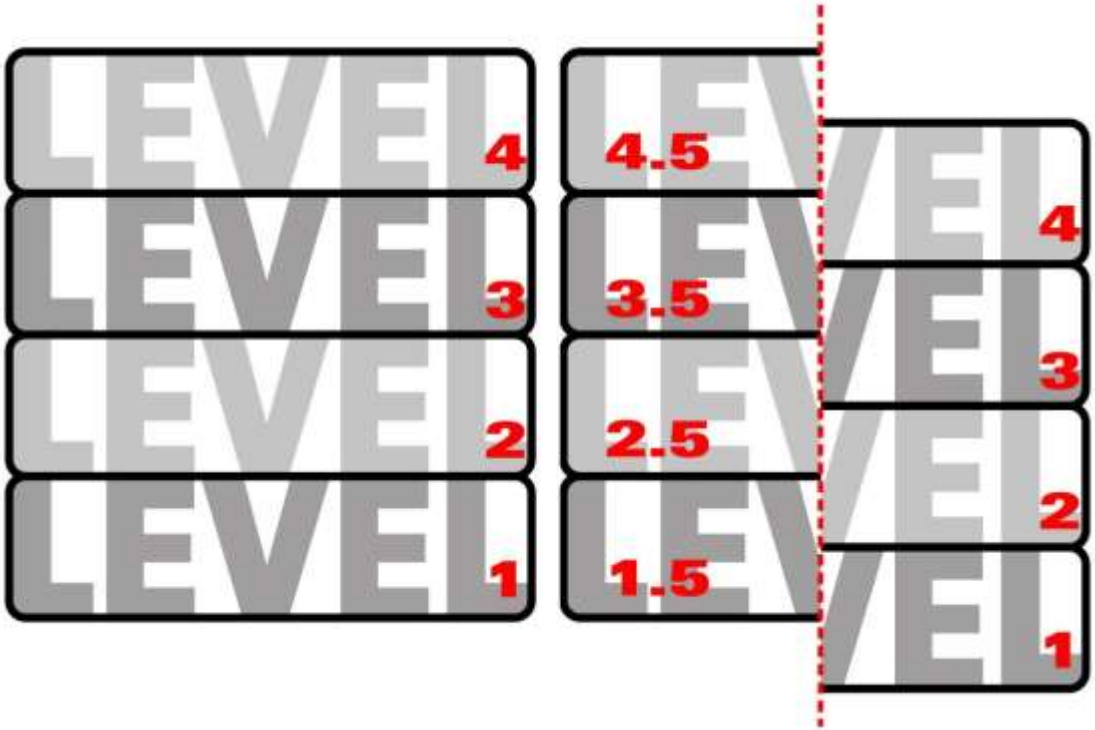


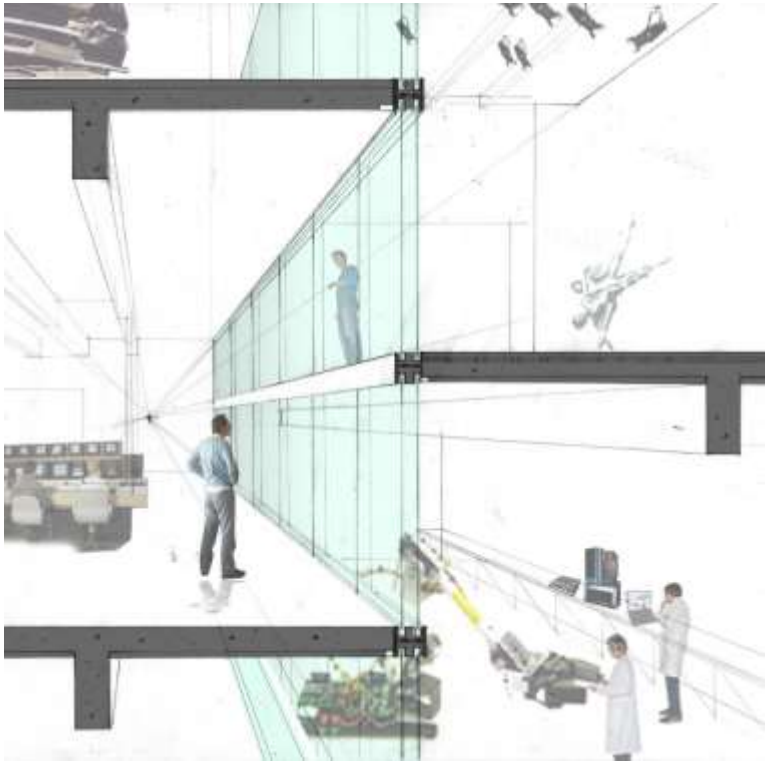
Barnard College Diana Center | New York, New York, USA

Weiss/Manfredi | 2010

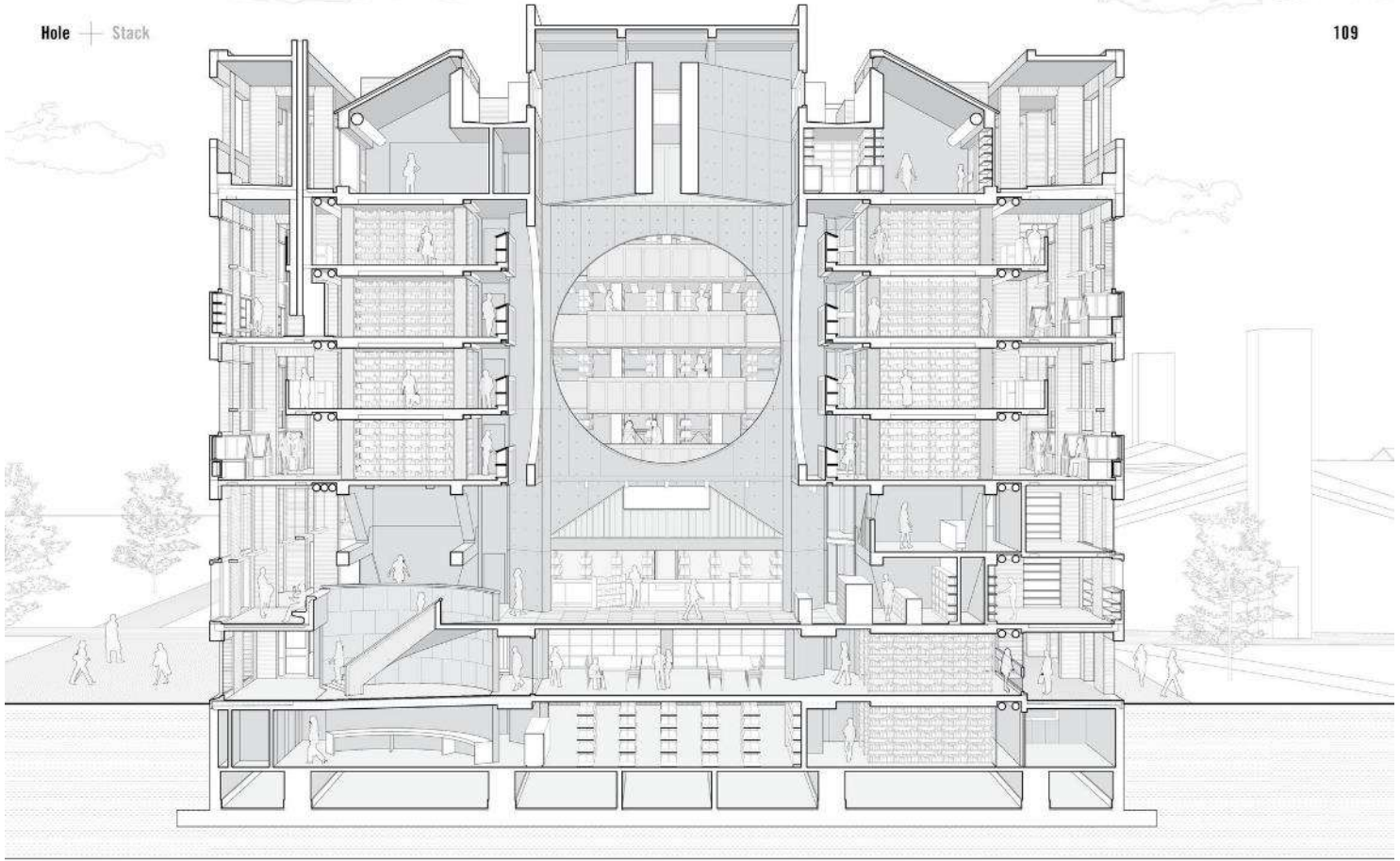
Situated parallel to Broadway, this arts center encompasses studios, classrooms, offices, exhibition galleries, a black-box theater, a cafe, a dining room, and a five-hundred-seat circular performance space. Four double-height spaces are stacked diagonally, producing a visually continuous void through the center of the building. This void is registered on the east facade (facing Broadway) through the articulation of custom-fritted glass panels. Separated by clear glass for acoustic reasons and fire mitigation, these volumes each contain a distinct social program and collectively allow visual links throughout the building as well as to the adjacent campus lawn. Academic programs are distributed around the oblique void, with the largest space—a circular performance hall—located under the horizontal shear. On the side facing west, circulation extends into glass volumes that cantilever outside the building's footprint. This section combines the spatial and optical effects of a hole section with the cumulative consequence of a horizontal shear.




LEVEL 4
LEVEL 3
LEVEL 2
LEVEL 1
4.5
3.5
2.5
1.5
LEVEL 4
LEVEL 3
LEVEL 2
LEVEL 1



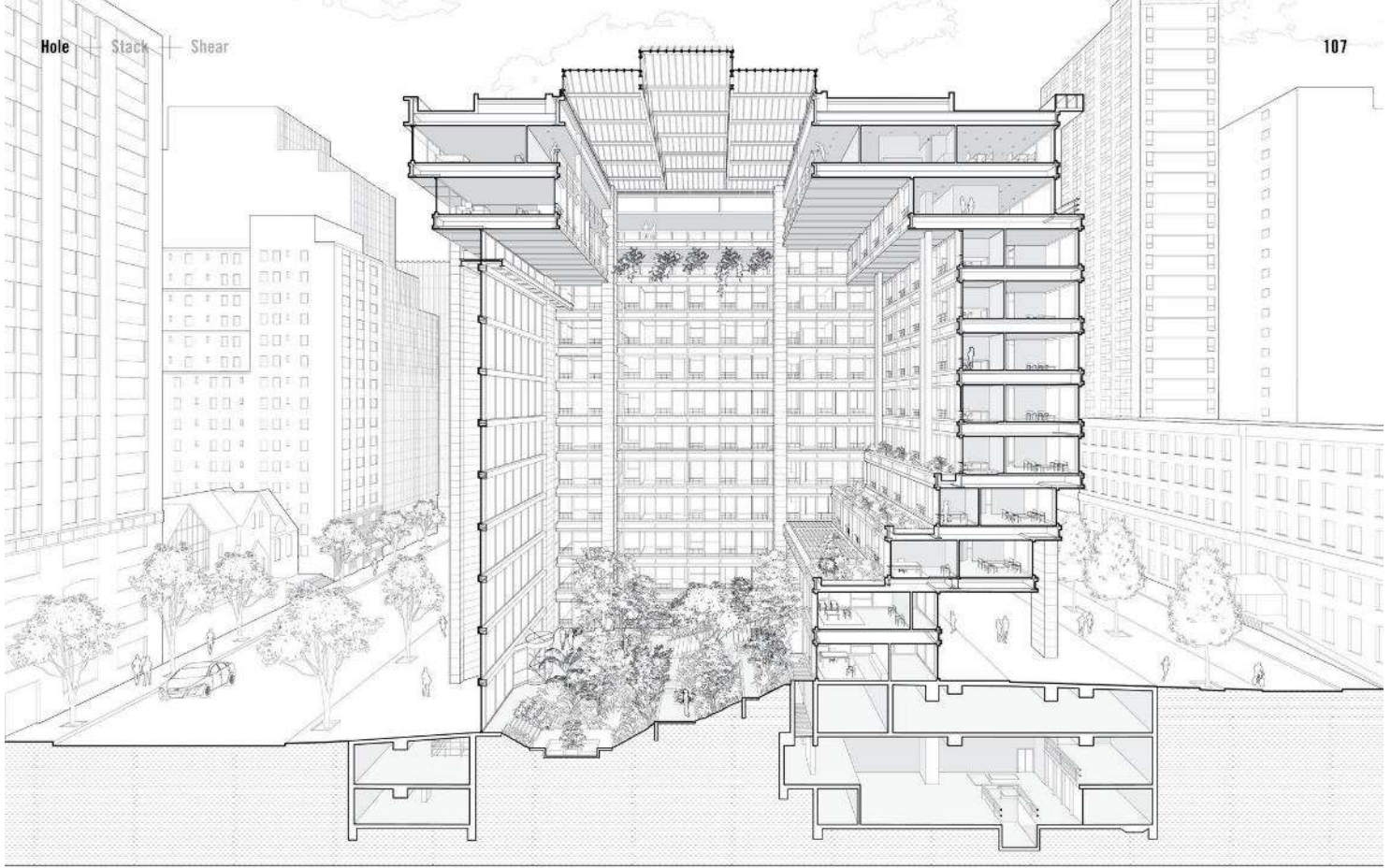
[buraco] . disposição de perfurações, em qualquer quantidade ou escala, atravessando uma ou mais lajes, transformando área de [piso] em qualidades para o edifício.



Phillips Exeter Academy Library | Exeter, New Hampshire, USA

Louis I. Kahn | 1972

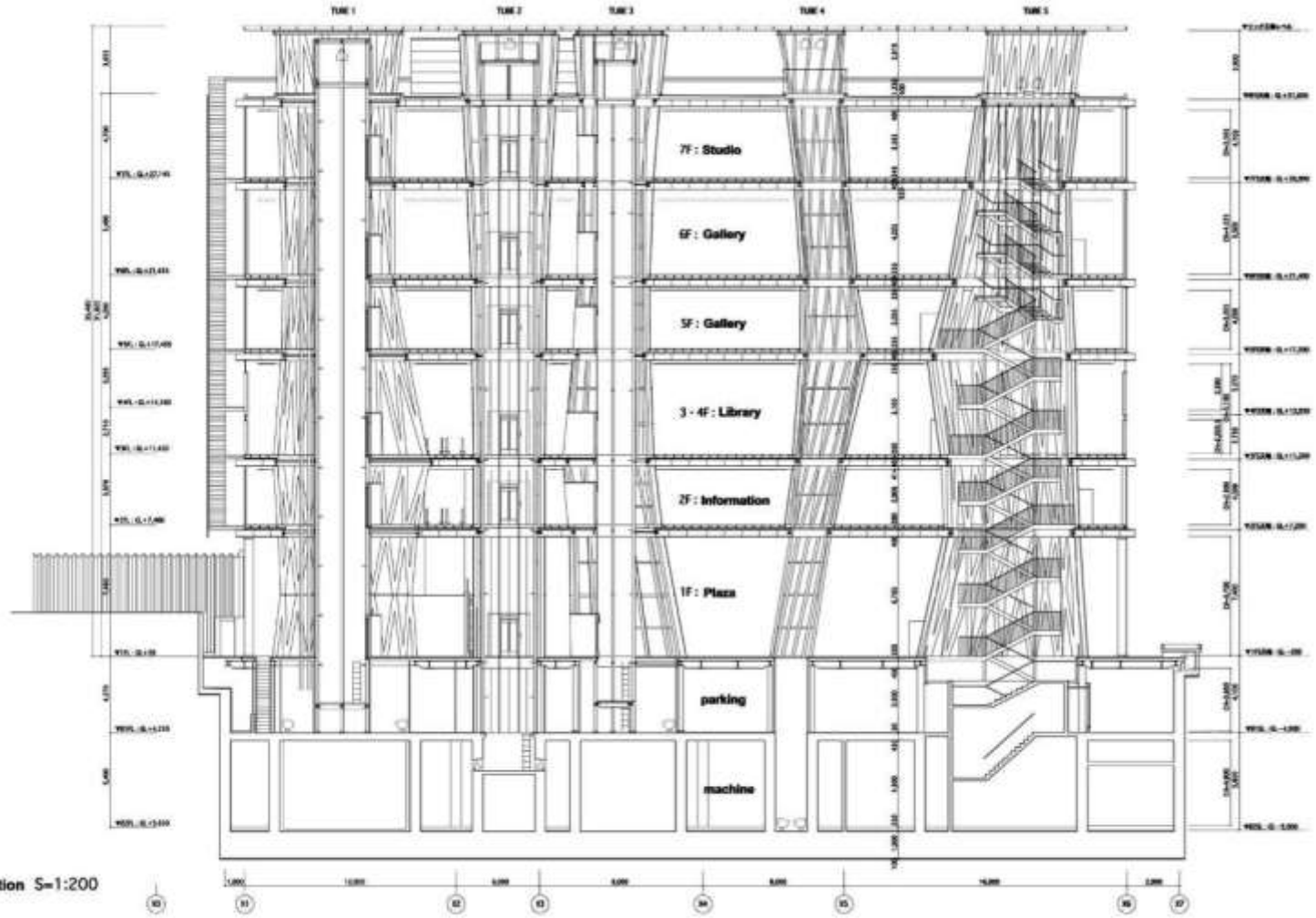
At the heart of the Exeter library is a 70-ft-high (21.3 m) atrium framed on all four sides by concrete structure. Capped by a monumental 16-ft-deep (4.9 m) concrete brace-frame and wrapped in a timber-clad clerestory, this central hole or atrium draws light into the middle of the 111-by-111-ft (33.8 by 33.8 m) square library, illuminating the circulation and reference floor below. Multistory circular holes on each side of the atrium reveal the wood-clad balconies of each floor and the stacks behind the balconies, which extend to the outer edges of the building. At the periphery, 210 built-in private carrels merge wooden furniture with the exterior brick skin, creating a synthetic wall section in which materials indicate use. The profile of the concrete floor slab integrates lighting fixtures, mechanical systems, balconies, and staircases while accommodating the sizable structural load of the collection. While this hybrid section animates a twentieth-century library, brick piers produce a crenellated effect along the perimeter ambulatory, echoing the medieval legacy of libraries.



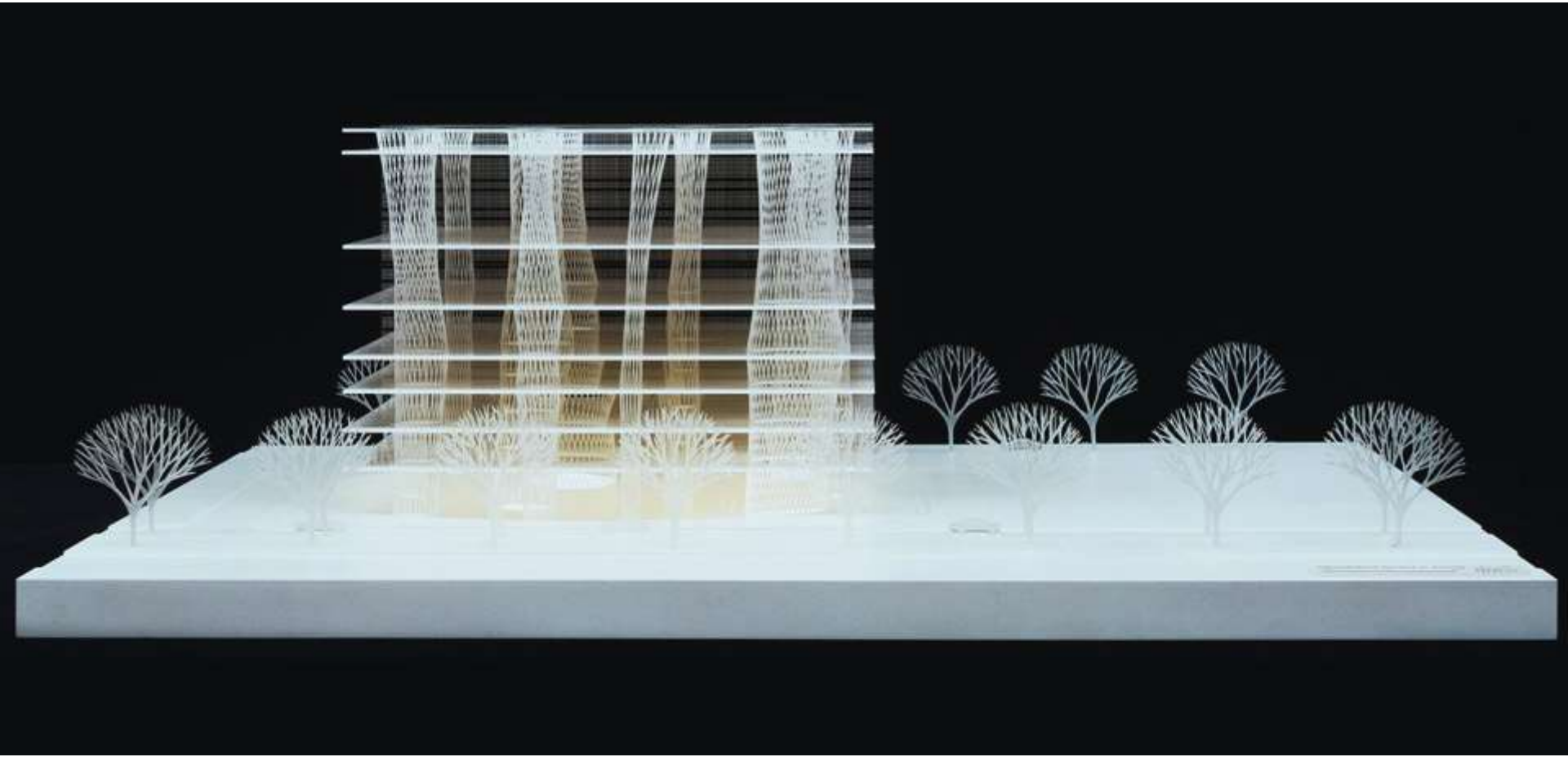
Ford Foundation Headquarters | New York, New York, USA

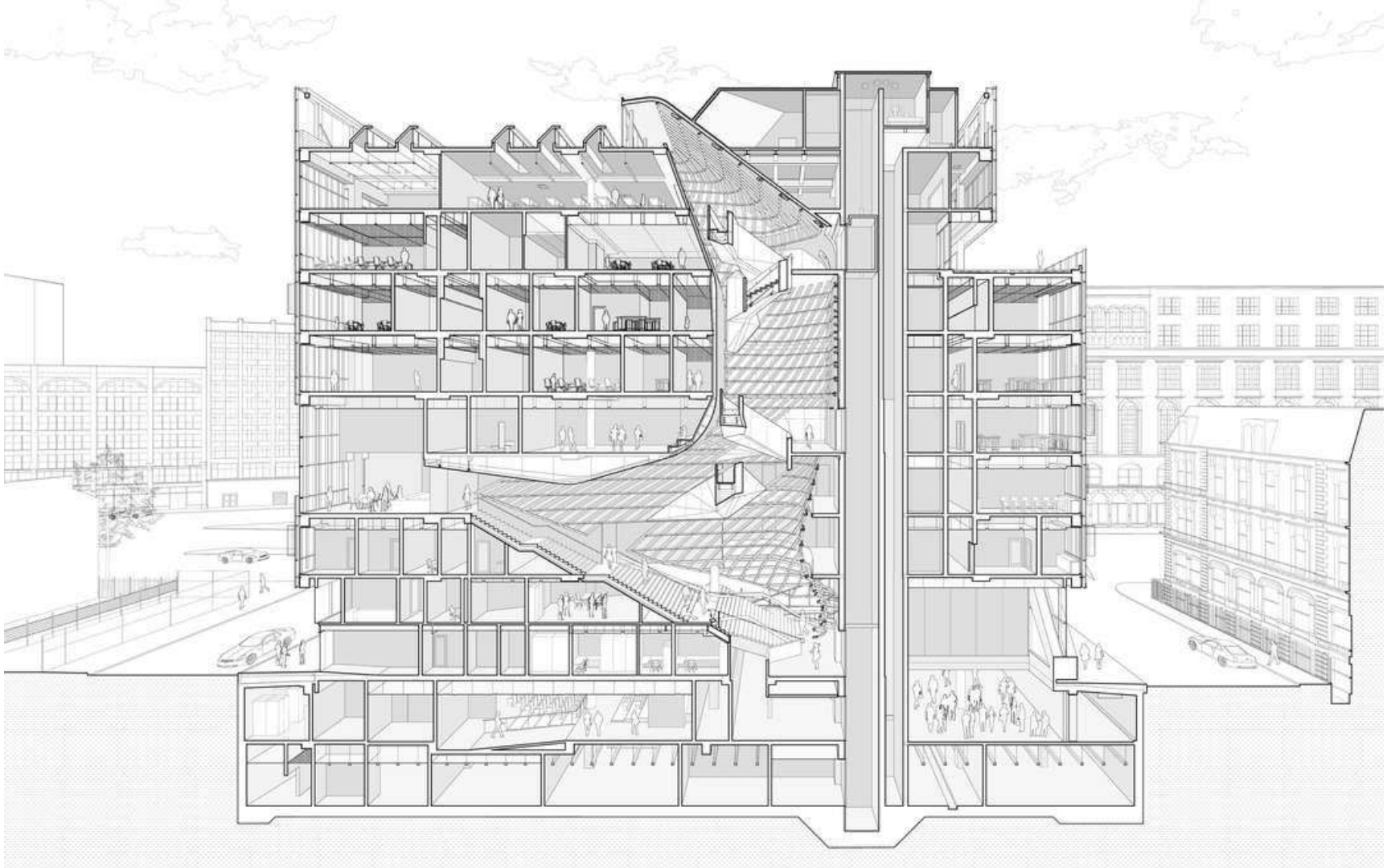
Kevin Roche John Dinkeloo and Associates | 1968

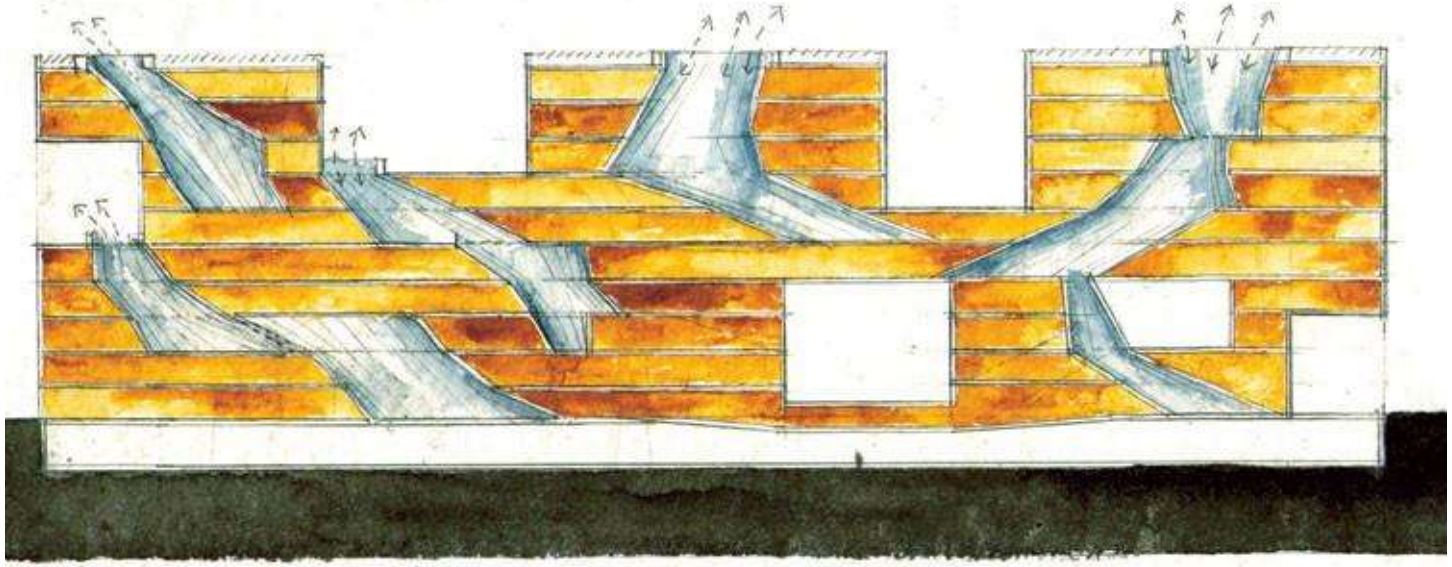
Featuring an interior garden, the glazed atrium at the heart of the Ford Foundation Headquarters strikes a balance between individual privacy and collective enterprise. Because the program required substantially less space than the permitted buildable volume, the Ford Foundation turned excess space into a civic amenity. The 179-ft-high (54.6 m) atrium, asymmetrically located in the southeast corner of the building, visually interconnects the offices while providing views diagonally to the East River. Steel beams spanning 84 ft (25.6 m) hold the ten-story glass facades on the south and east sides, which open the garden to public view and fill the interior courtyard with light. Banks of offices with fully glazed windows that allow the temperate greenhouse air to circulate overlook the atrium on its north and west side. The executive suite, a collective dining facility, and an expansive skylight cap the top of this holed section.



Section S=1:200



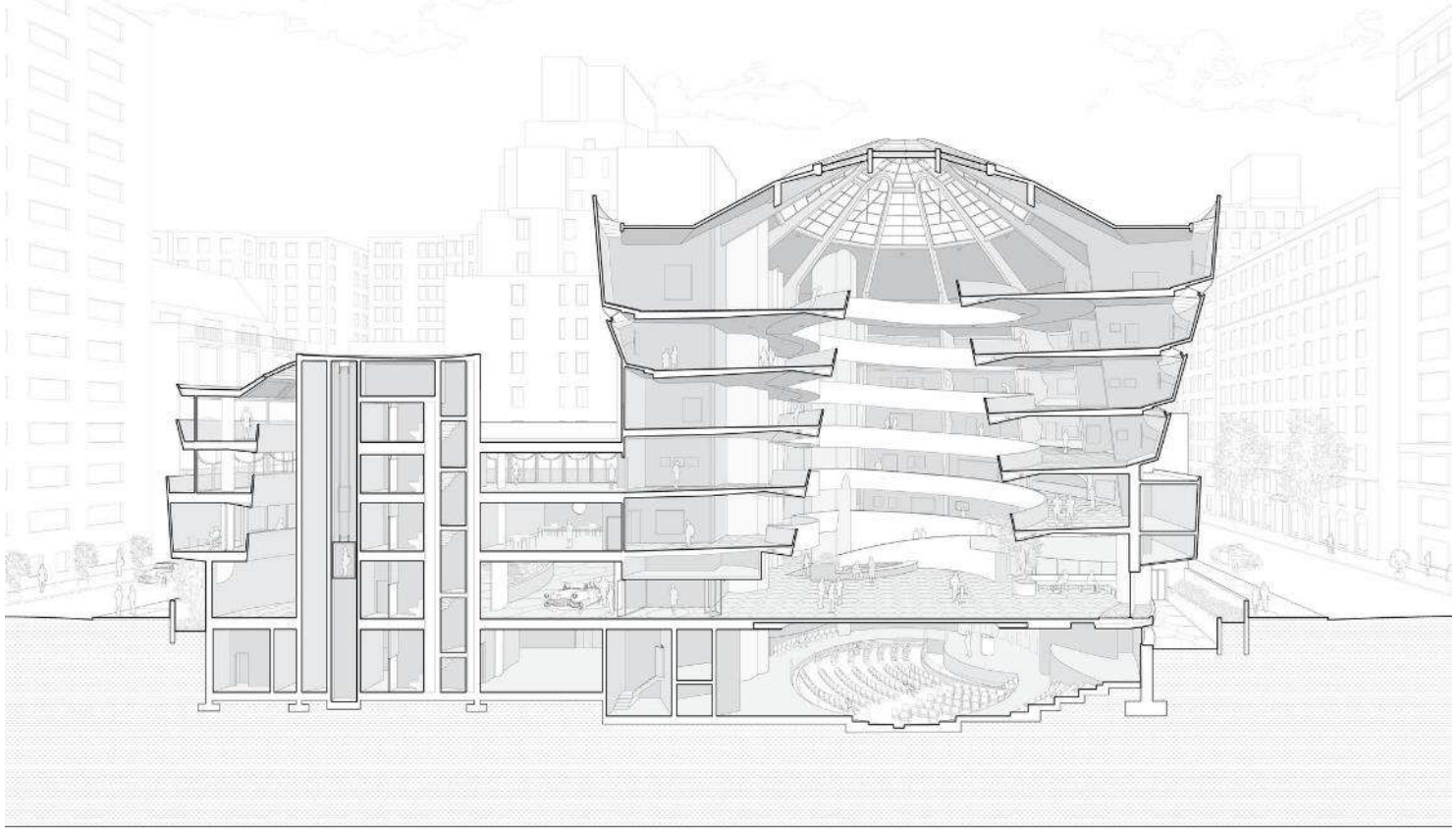




M.I.T. 2001 (POROSITY) SPONGE

LIGHT & AIR VENTILATION (AIR DRAWN UP THROUGH MAIN "LUNGS" VIA SLOW RPM FANS OPERATED BY ROOF TOP PHOTOVOLTAIC CELLS)

[inclinação] . a manipulação do ângulo de um plano horizontal ocupável, a fim de permitir a interação e continuidade através dos níveis.

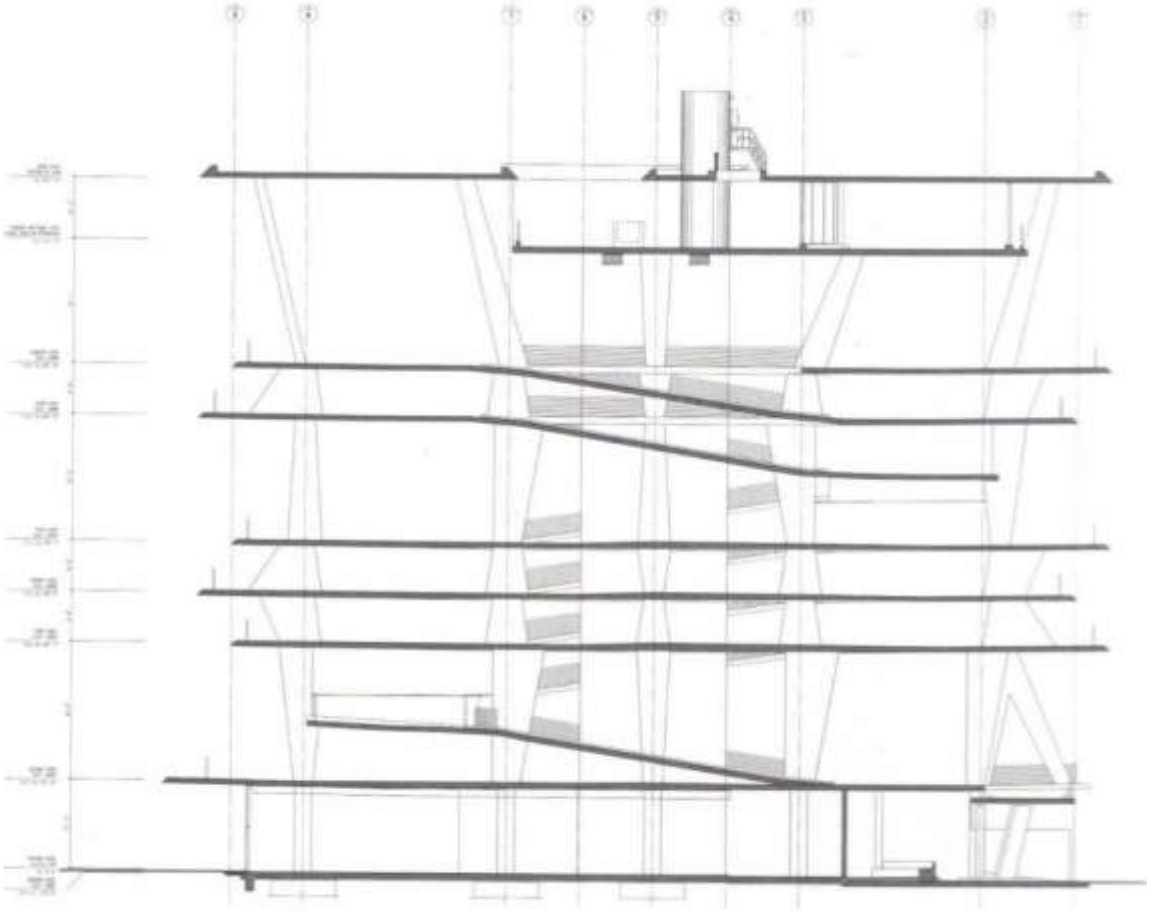


The Solomon R. Guggenheim Museum | New York, New York, USA

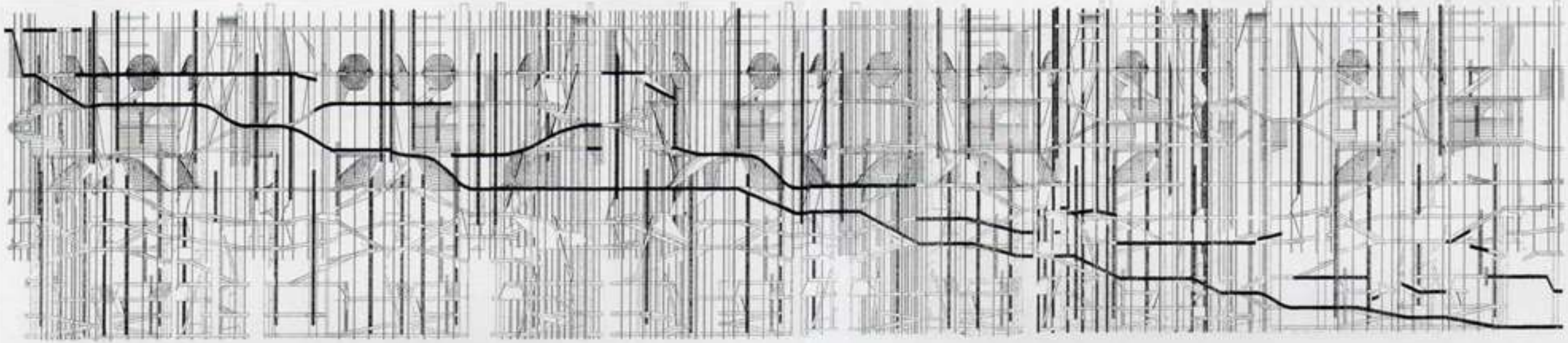
Frank Lloyd Wright | 1959

The main gallery of the Guggenheim Museum is an exemplary demonstration of an inclined section defining an entire building. Rising at a 3 percent grade and stretching more than 1/4 mi (0.4 km) in length, the continuous path expands in width as it moves upward, producing a conical void at the center of the museum and an inverted conical form on the exterior. A skylight supported by concrete ribs fills the 92-ft-high (28 m) atrium with daylight, while the continuous perimeter skylight enabled by recessions in the exterior profile was intended to backlight paintings to make them appear to float. The tapered concrete balcony and integral soffit conceal the air supply duct. The primary point of torsion between the incline and level floor is at the bottom, where Wright folded the ramp up against itself to form a base. An exterior porte cochere separates the main gallery from the administrative wing. While the administrative wing echoes the circular form of the main gallery, the inclined section is confined to the gallery, as connection among the flat administrative floors is made through a service core, with a small atrium providing limited visible continuity. In the main gallery, the inclined section's physical continuity is complemented by the visual connectivity of the large atrium.


KUNSTHAL
ROTTERDAM




LINCOLN



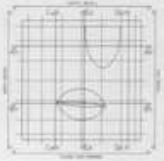
米蘇館與圖書館的轉角

聖柏納館與米蘇館的轉角

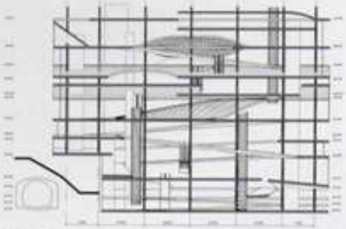
聖柏納館與阿拉伯世界研究所的轉角

阿拉伯世界研究所與米蘇館的轉角

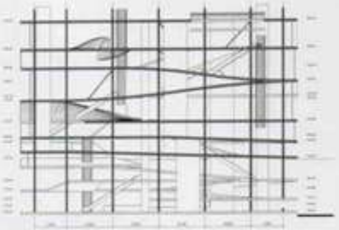
上圖
計畫成形的過程
剖面圖旋轉
（見每一樓層的剖面與縱剖面）



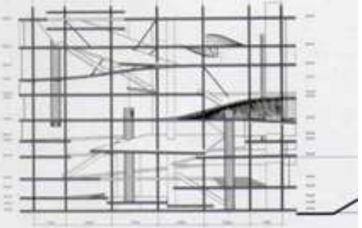
剖面與立面的設計



剖面Bn



剖面De



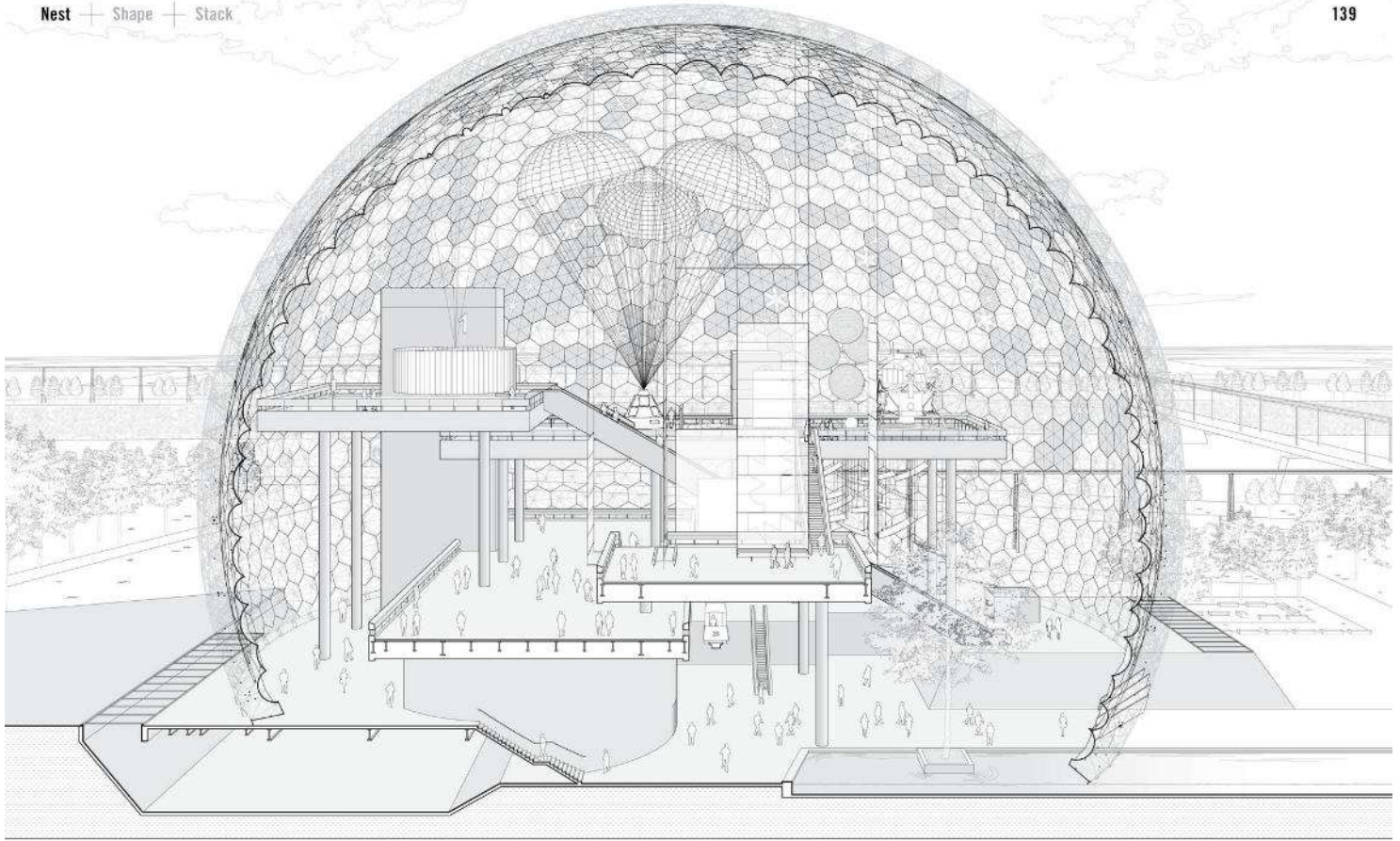
剖面Cw

[ninho] . a criação de diversas secções através da interação ou sobreposição de volumes autônomos.

Mont-Cenis Training Center | Herne-Sodingen, Germany

Jourda Architectes | 1999

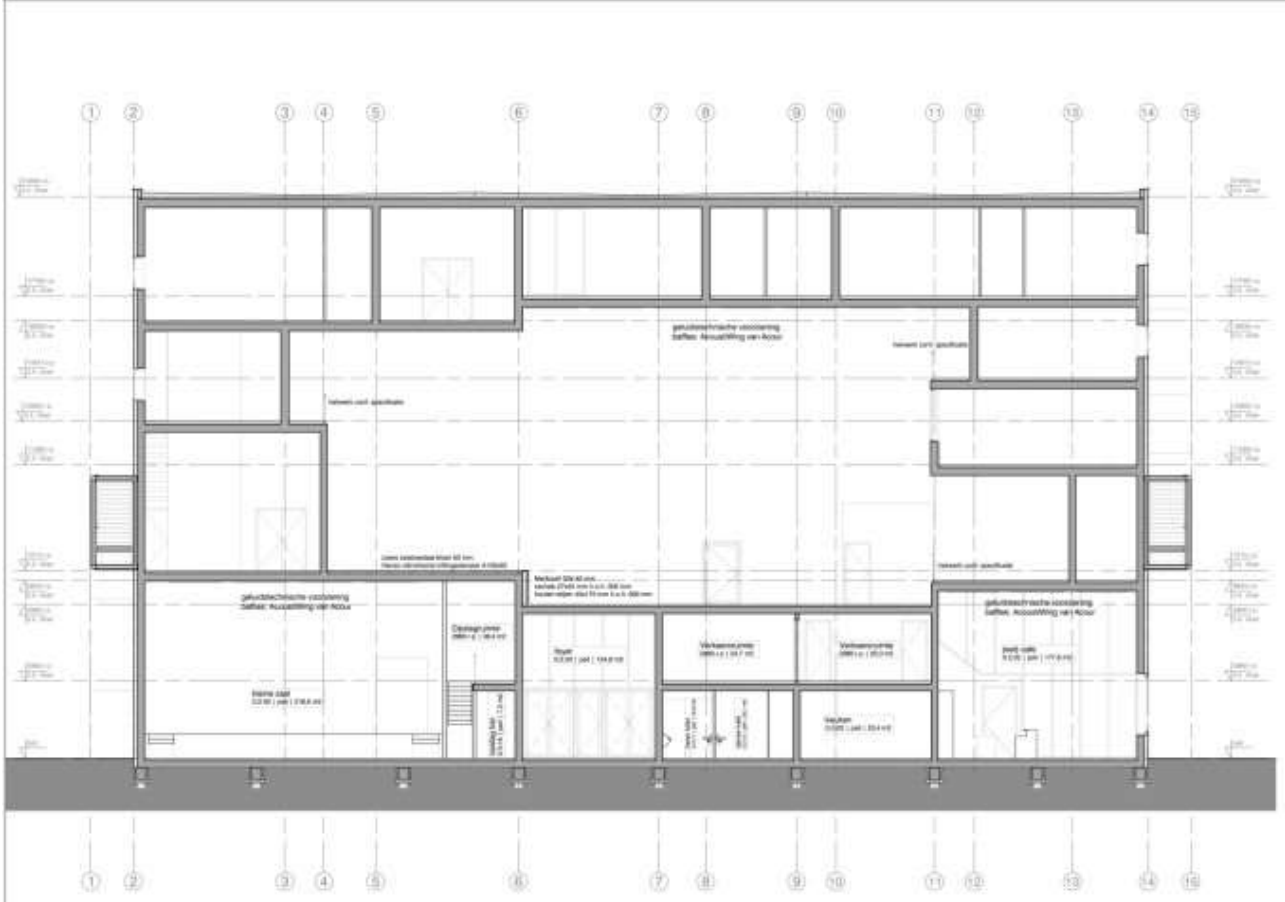
Built over the head of the abandoned Mont-Cenis coal mine, this civil-service facility demonstrates how a nested section can generate temperature gradients through microenvironments at an urban scale. Two rows of two- and three-story structures, designed to support short-term training and educational facilities, sit underneath a vast 123,000-sq-ft (11,427 sq m) glass envelope. Built from locally manufactured glass and regionally harvested timber, this solar greenhouse floats on 50-ft-tall (15.2 m) timber poles and is spanned by laminated wood trusses carrying 100,000 sq ft (9,290 sq m) of photovoltaic panels that generate two and a half times the energy consumed by the complex. Motorized openings at the upper and lower quadrants of the glazed box induce a controlled stack effect to modulate a temperate interior microclimate year-round. Pools and vegetation provide cooling while populating the gardens and courtyards of this campus-in-a-terrarium. Freed of the requirement for extensive weather enclosure or insulation, the educational structures were inexpensive to build. In this nested section the interstitial space is neither exterior nor fully interior, but provides an inhabitable, passively conditioned buffer zone, enhancing the performance of the buildings within.



United States Pavilion at Expo '67 | Montreal, Canada

Buckminster Fuller and Shoji Sadao | 1967

This pavilion was commissioned at the height of the Cold War by the United States Information Agency to stand opposite the Soviet Pavilion. The American Pavilion contained a three-hundred-seat theater and multilevel exhibition platforms designed by Cambridge Seven Associates to celebrate the country's cultural and aeronautical achievements. All exhibition spaces were nested inside a geodesic steel-framed dome with a diameter of 250 ft (76.2 m) and a height of 206 ft (62.8 m). A 40-in (101.6 cm) gap separated the outer triangulated surface of the dome from an inner hexagonal surface, which was infilled with 1/4-in-thick (6.4 mm) transparent acrylic panels. A motorized, self-regulating shading system covered one-third of the panels, working with air-conditioning to create a vast thermal microclimate. Within the interior volume of 6.7 million cu ft (189,722 cu m) were a series of concrete platforms supported by rolled-steel sections and 30-in-diameter (76.2 cm) steel columns. These exhibition trays were accessed via a series of escalators, one of which was 125 ft (38.1 m) long—at the time the longest ever constructed. This unique space was a consequence of the radical difference between the occupiable horizontal platforms and the huge translucent dome.



DOORSNEDE AA

Opbouw

Dragende buitenwand

Gevels

Binnenwanden

Vloeren

Plafonds

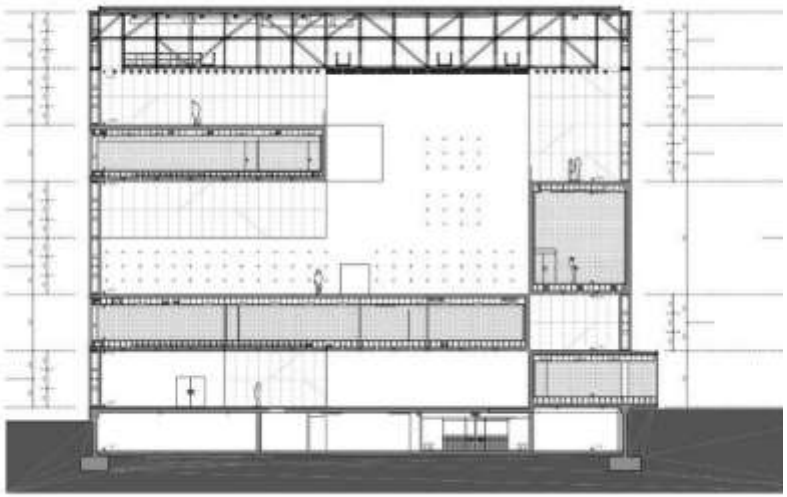
Begane grondvloer

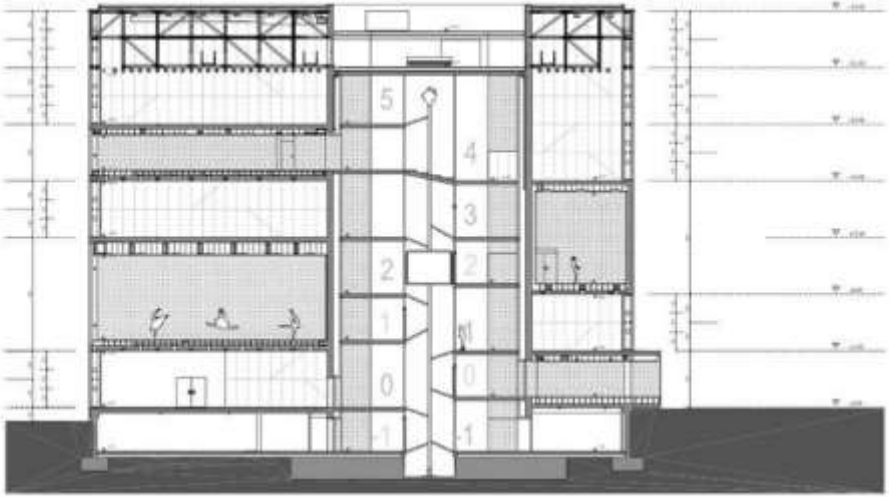
Daken

Verticale raaiopeningen/delen

- alle maten in mm
- exacte constructieafmetingen en dimensionering door constructeur
- afmetingen in het werk controleren
- alle openingen muren en vloeren/wand afstemmen

De Effenaar | Eindhoven
Dm. Wallaeiu, dhr. Aarjans & dhr. Reinenda
Stedelijkheidingen (6)
6.000 | Doorsnede AA

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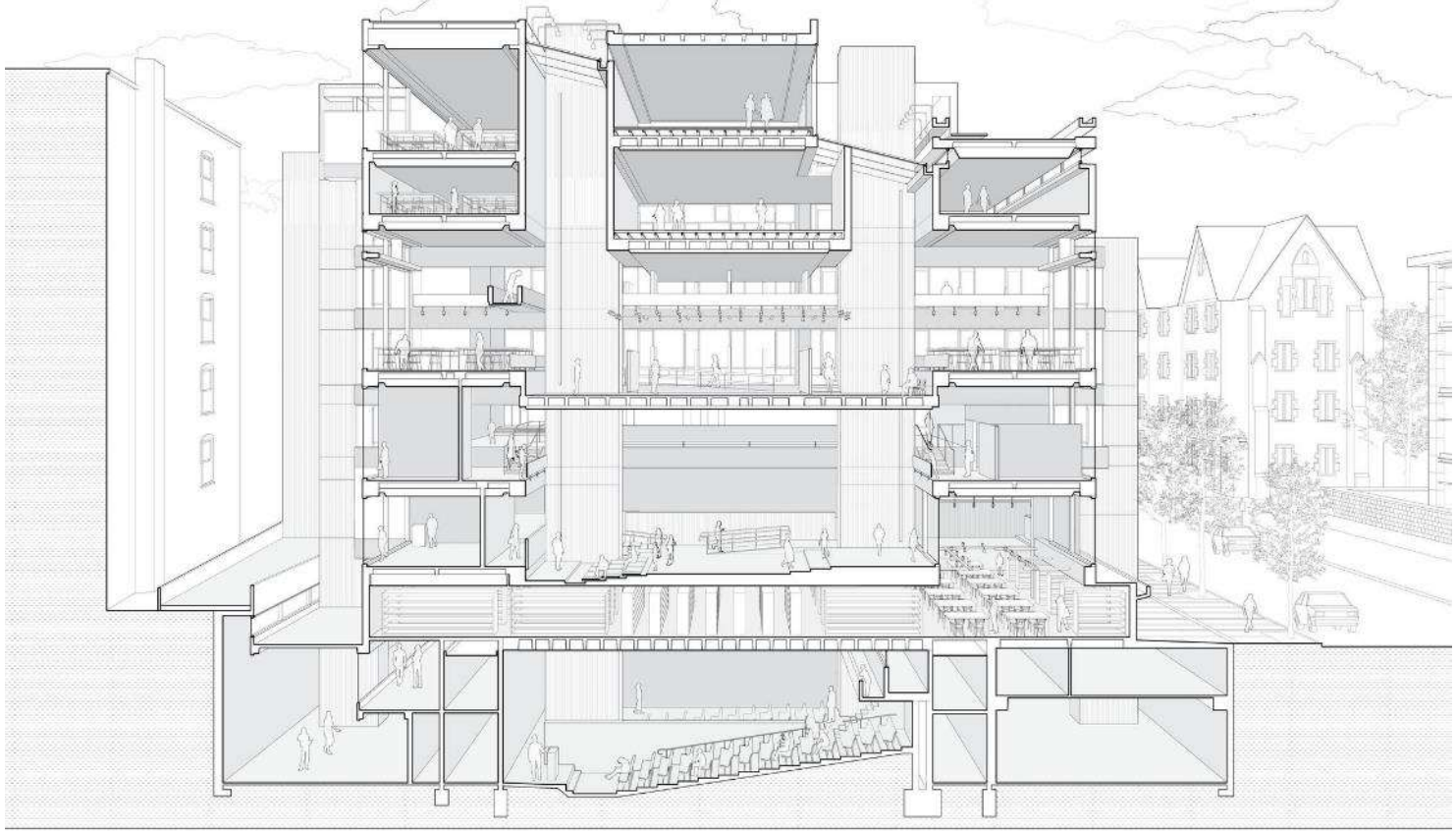
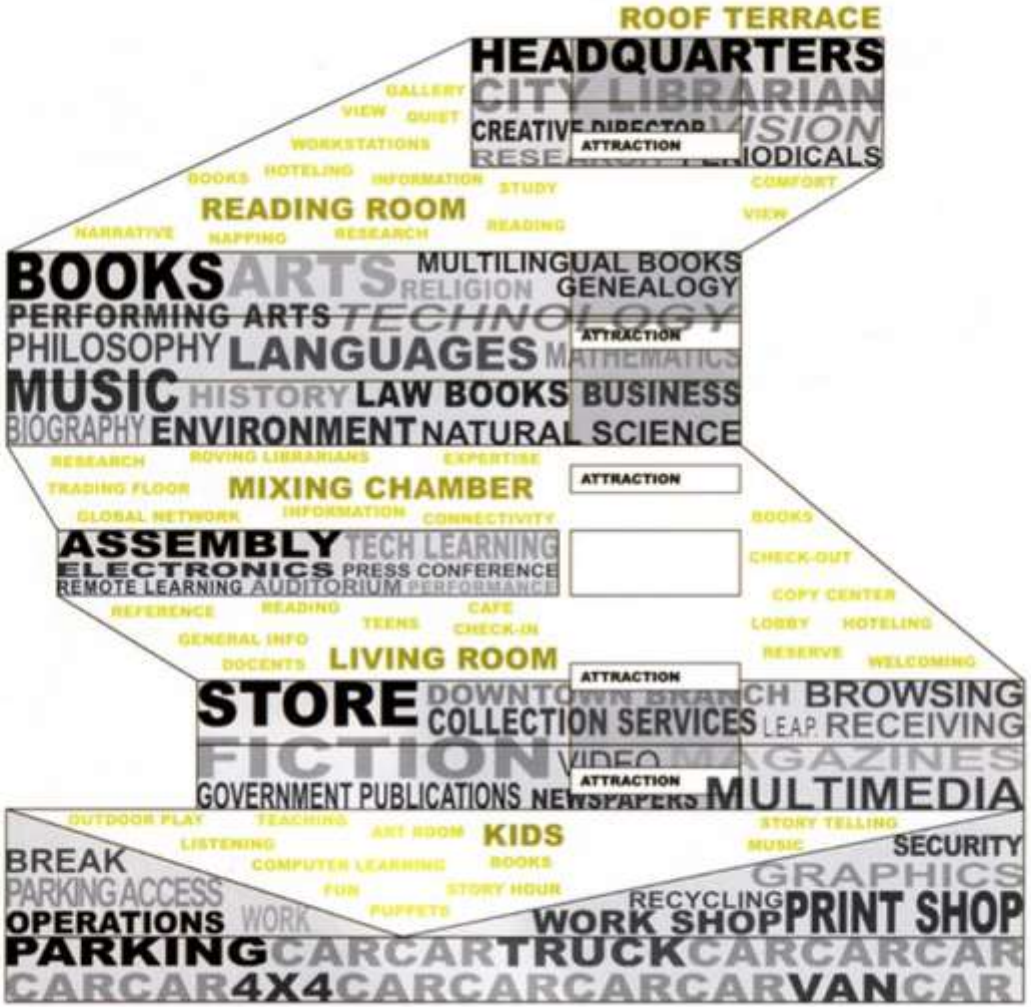


Yale Art and Architecture Building | New Haven, Connecticut, USA

Paul Rudolph | 1963

Designed and constructed during Paul Rudolph's tenure as chair of the architecture department, the iconic Art and Architecture Building arrays 37 unique floor levels around a central core of open, collective spaces anchored by a series of striated-concrete towers. The section, which combines stacked, sheared, and nested forms punctuated by holes, produces a variety of visual and spatial overlaps and intersections, most notably among the expansive central pinup spaces and galleries and the more peripheral and compressed studios and offices. Staggered levels, bridges, and offsets multiply the interactions among adjacent spaces while allowing for campus views through large, steel-framed glass windows from deep within the interior. Massive piers of heavily textured, bush-hammered concrete provide structural support for horizontal platforms, house mechanical services, and contain vertical circulation. At the upper levels, the play of horizontal planes gives way to enclosed tubelike forms that bridge the vertical masses to enclose the spaces below. Between these volumes a collection of skylights and clerestories admit daylight, enlivening the varied spaces of this complex combination of section types.


ROOF TERRACE
HEADQUARTERS
CITY LIBRARIAN
CREATIVE DIRECTOR
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INFORMATION
STUDY
COMFORT
READING ROOM
NARRATIVE
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BIOGRAPHY
ENVIRONMENT
NATURAL SCIENCE
RESEARCH
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TRADING FLOOR
MIXING CHAMBER
ATTRACTION
GLOBAL NETWORK
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BOOKS
ASSEMBLY
TECH LEARNING
ELECTRONICS
PRESS CONFERENCE
REMOTE LEARNING
AUDITORIUM
PERFORMANCE
CHECK-OUT
COPY CENTER
REFERENCE
READING
CAFE
TEENS
CHECK-IN
LOBBY
HOTELING
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RESERVE
WELCOMING
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COLLECTION SERVICES
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FICTION
VIDEO
MAGAZINES
ATTRACTION
GOVERNMENT PUBLICATIONS
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MULTIMEDIA
OUTDOOR PLAY
TEACHING
ART ROOM
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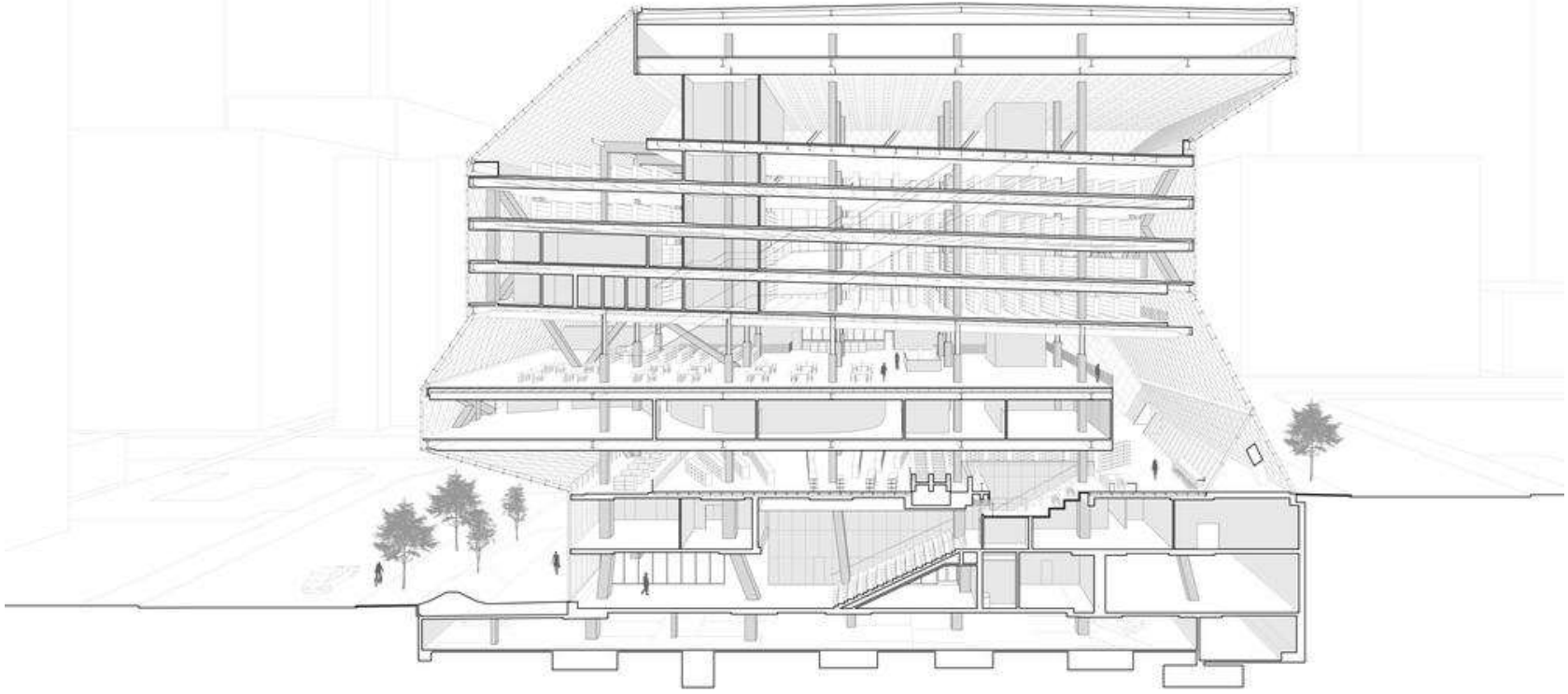

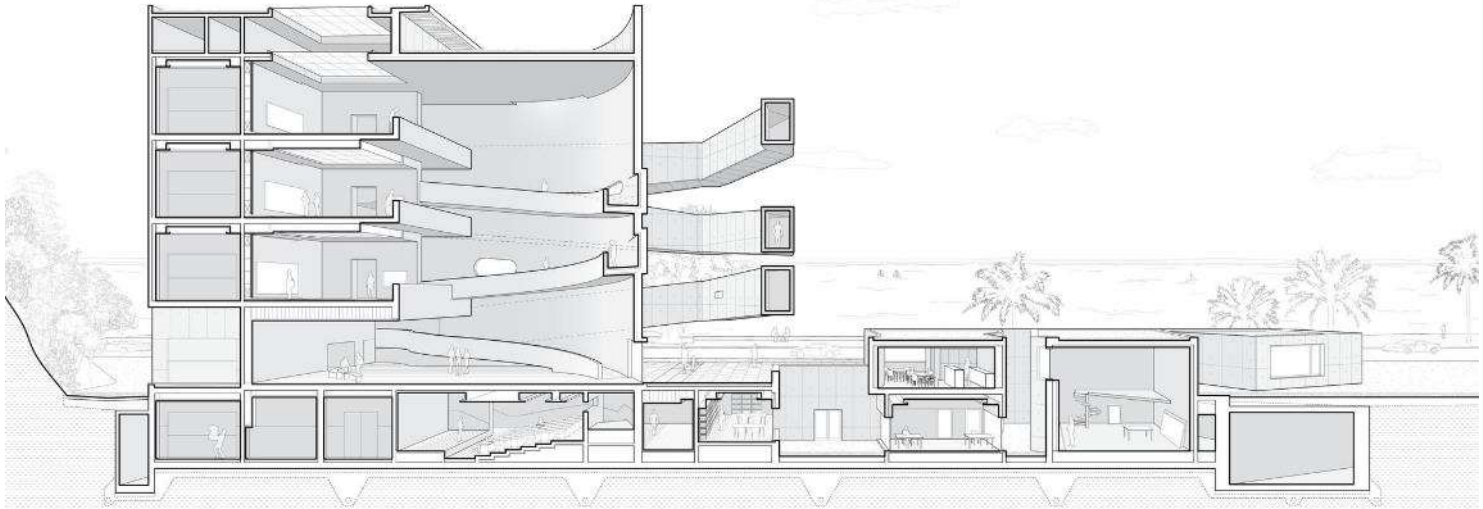

Iberê Camargo Foundation Museum | Porto Alegre, Brazil

Álvaro Siza | 2008

This cultural building occupies a narrow site between a coastal highway and a densely vegetated cliff. In this confined site, Siza situated a partly subterranean linear plinth and a sculptural volume of white reinforced concrete. The plinth contains various programs, including an archive, an auditorium, and parking located underneath the road. Containing the primary exhibition space, the sculptural volume is defined by a series of L-shaped, top-lit rectilinear galleries framing a four-story atrium wrapped on the side opposite the galleries by a series of undulating circulation ramps. Together, these form a continuous promenade that weaves between interior and exterior. While the internal ramps nest against the sinuously shaped outer wall, the external ramps reach beyond the face of the building in concrete tubes, delineating an exterior entry court caught between the outer wall of the atrium and the cantilevered arms of the ramps. Like Frank Lloyd Wright's Guggenheim, Siza's building couples the inclined surfaces of a ramping circulation system with the vertical organization of an atrium. In this hybrid section, however, the space enclosed extends outside the main volume of the building, linking the museum to its seaside site.

Rolex Learning Center | Lausanne, Switzerland

SANAA | 2010

Located in the middle of an open site, this campus center for the Ecole polytechnique fédérale de Lausanne contains an array of social spaces, libraries, cafes, and meeting halls within a single, largely horizontal volume. The floor is a 2-ft-thick (61 cm) concrete slab, formed into a curved shell that lifts above the ceiling of a subterranean parking structure, allowing the grounds of the campus to extend below and through the building. A 29-ft-6-in–by–29-ft-6-in (9 by 9 m) grid of slender steel columns supports a steel and glulam framed ceiling above the undulating slab. This building can be seen as a hybrid of three section types. Its rectangular, 546-ft-3-in–by–398-ft-7-in (166.5 by 121.5 m) floor plate is extruded, typically, to a 10-ft-10-in (3.3 m) internal ceiling height, with a slightly higher extrusion for certain programs, such as performance halls. That extruded horizontal space is defined by two arched zones that delaminate from the ground and allow a clustering or pudding of programs on their shaped surfaces. This extrusion is then punctured by fourteen curvilinear holes, which distribute light and views obliquely through the slab. The cumulative effect of this hybrid section is the unprecedented spatial quality of a continuous free plan warped into the vertical axis.

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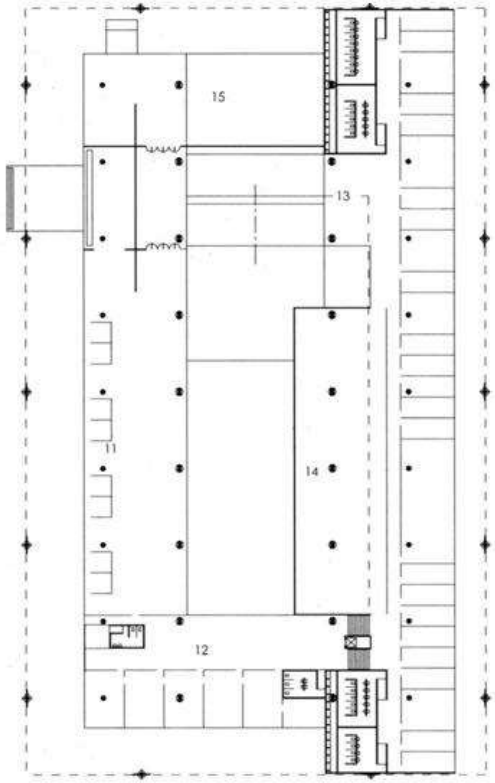
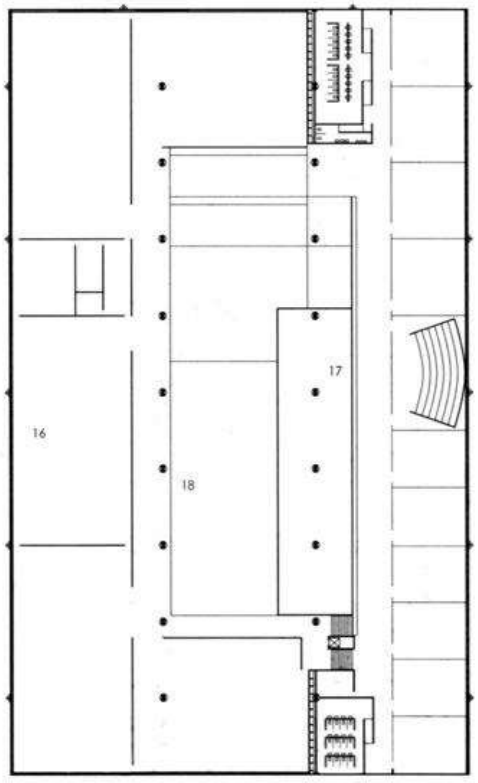
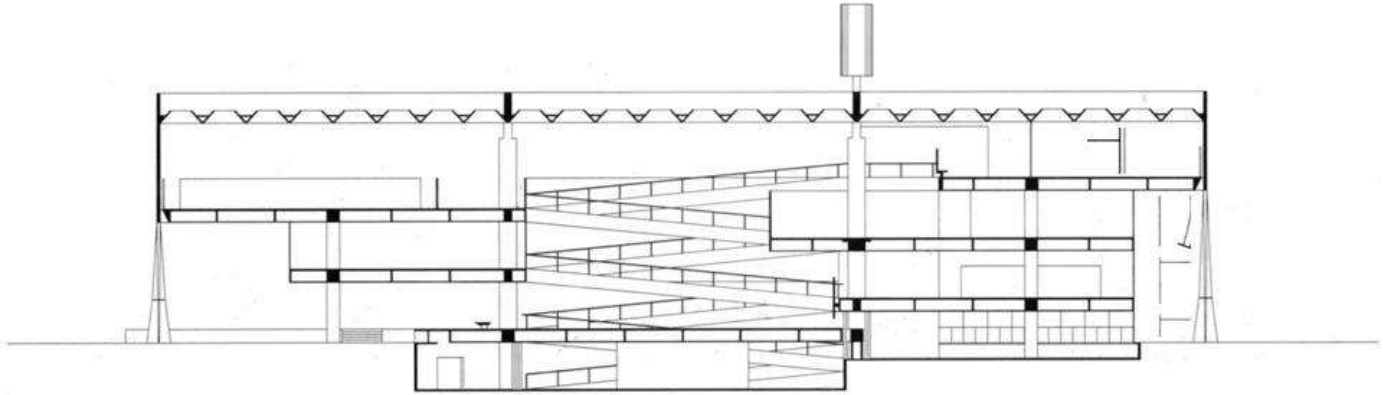


BIBLIOTECA/DEPARTAMENTOS



ESTUDIOS/ SALAS DE AULA



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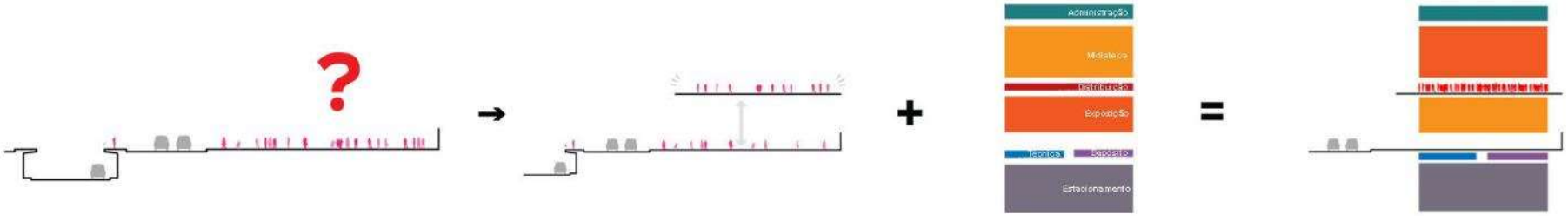
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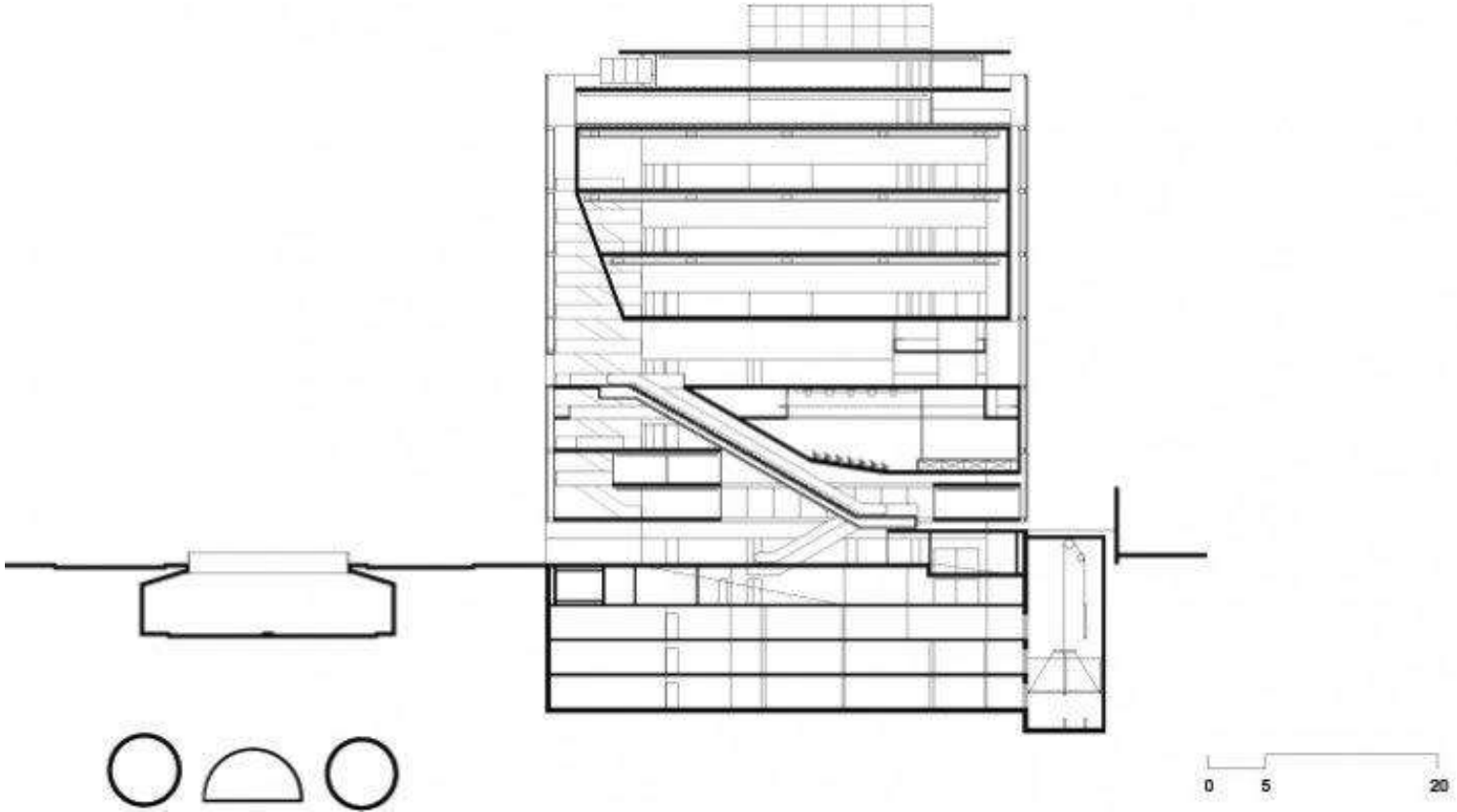
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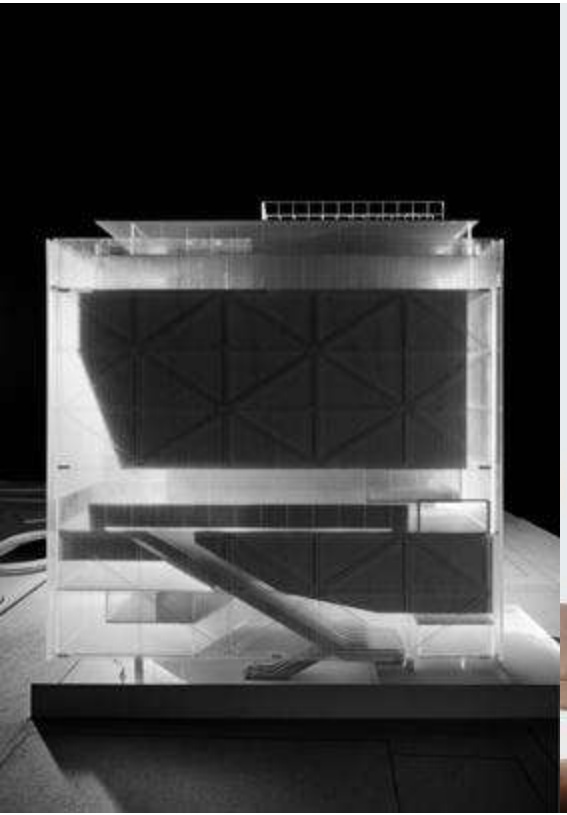

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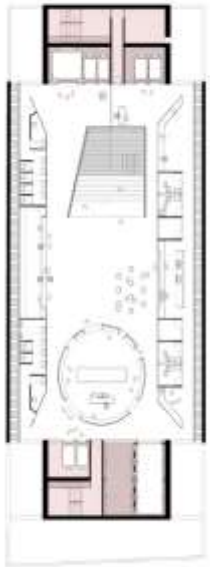

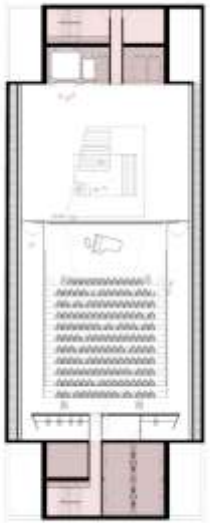

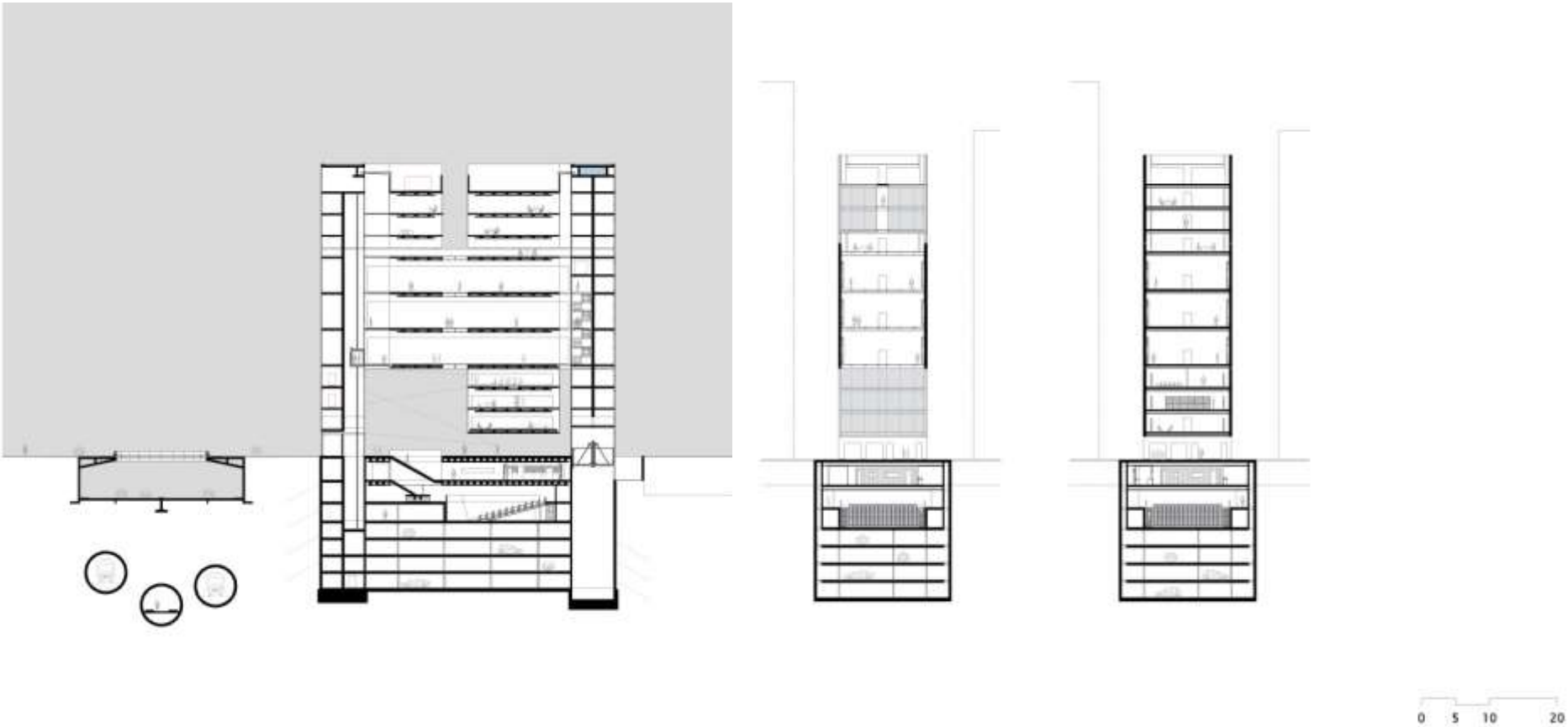
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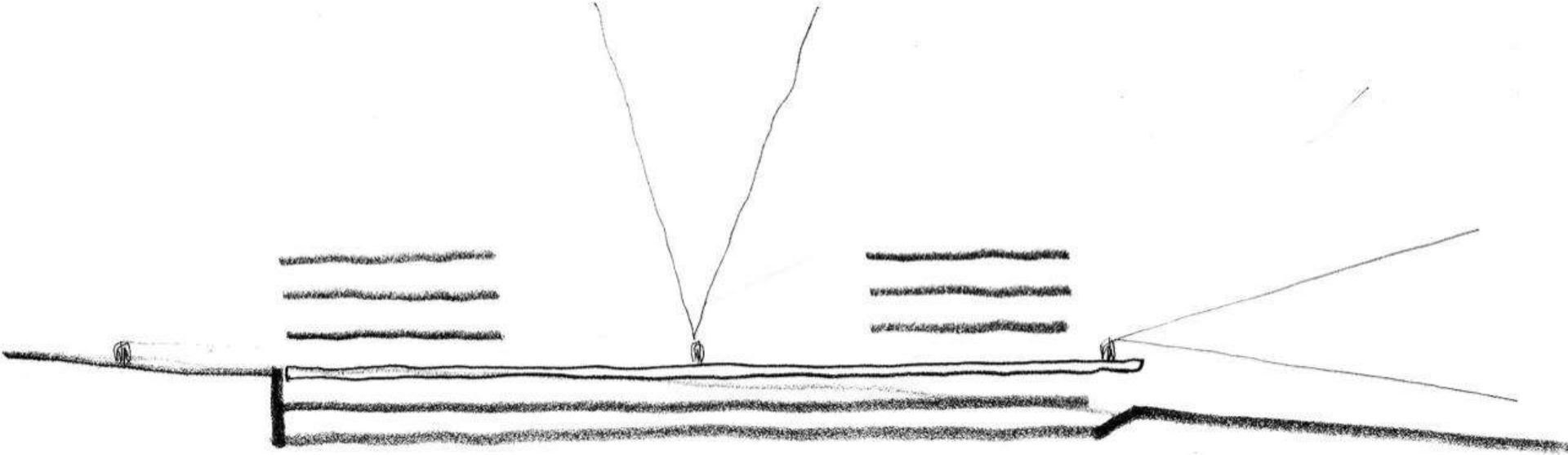

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